An Underutilization of Engineering Project Managers in Construction Industry:

A case study of Nigeria

by
Iroha Ebuka Valentine
Student ID number: 1256004

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Assessment Committee:		
Supervisor:	Professor	Satoshi Tsuchiya
Committee members:	Professor	Kwangmoon Kim
	Professor	Tsunemi Watanabe
	Professor	Steve Rowlinson
	Professor	Hiroaki Nishiuchi

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Gloria Patri, et Filio, et Spiritui Sancto,
sicut erat in principio, et nunc, et semper,
et in saecula saeculorum. Amen.

Nsọ, nsọ, Onye-nwe-ayi Chineke nke usu nile nke ndi-agha nsọ.
Eluigwe na ụwa jupụtara n'ebube gị. Hosanna na nke kachasị elu.
Onye agọziri agọzi ka Onye nābia n'aha Jehova. Hosanna na
nke kachasị elu.

“Operations keep the lights on, strategy provides a light at the end of the tunnel, but project management is the train engine that moves the organization forward.”

–Joy Gumz

I dedicate this work to my family, and especially to my late mother,
Mrs. Sarah Stella Iroha, who played a fundamental role in guiding me to where I am today academically,

ABSTRACT

The Nigerian construction industry (NCI) has been plagued by persistent issues such as project delays, cost overruns, and project abandonment, which are largely attributed to inadequate project management practices and the underutilization of project managers (PMRs). This study aims to understand the underlying causes of PMR underutilization and underperformance within the institutional framework of the Nigerian Construction Industry (NCI). Using a mixed-methods approach, data were collected from previous literature, 206 questionnaires, and 36 semi-structured interviews with organizations and project managers in Nigeria. The study employs a four-level institutional analysis to examine the interrelationships between embedded factors such as corruption, political influence, religious and tribal discrimination, and organizational culture, as well as the influence of institutional laws and regulations on the effective utilization of PMRs. The findings indicate that PMRs underperformed in more than 60% of their tasks, particularly during the execution phase of projects, while outperforming in only 20% of tasks. Underperformance is significantly linked to institutional issues such as weak governance, ineffective regulatory frameworks, and adverse organizational culture, which prioritize corrupt practices over project needs. This, in turn, contributing to PMRs underperformance and reduced commitment, results in minimal incentives and limited career growth opportunities for PMRs

This study provides an in-depth institutional analysis to uncover the underlying causes of these problems, focusing on the factors within the NCI's institutional framework that hinder the effective utilization of PMRs. By analyzing data collected from previous literature, 206 questionnaires, and 36 semi-structured interviews with industry stakeholders, the study reveals that over 60% of tasks assigned to PMRs are underperformed, while 20% are outperformed. The underperformance is primarily related to external pressures such as corruption, political influence, religious and tribal discrimination, and a problematic organizational culture, which together create a challenging environment for PMRs. The institutional analysis categorizes these factors into a four-level framework, demonstrating how they interrelate to undermine PMR performance. Corruption and political influence, in particular, weaken the governance

mechanisms within the NCI, leading to a preference for corrupt practices over project needs. This, in turn, contributing to their underperformance and reduced commitment, results in organizational culture of minimal motivational incentives and limited career growth opportunities for PMRs. A correlation analysis revealed a significant two-way causal relationship between underperformance and low motivational support, suggesting that organizational support alone may not suffice to enhance PMR performance.

To further explore these dynamic issues, the study integrates a game theory model with regression analysis, demonstrating that the (stay, support) strategy where PMRs stay in their current organizations with the expectation of motivational support, is the dominant solution as long as the net contribution of support remains positive. However, the current levels of support are inadequate to significantly enhance PMR performance due to external pressures like corruption, political influences and organizational culture, which have a more profound impact on performance outcomes than organizational support measures. The study emphasizes the need for comprehensive institutional reforms alongside enhanced organizational strategies to address the underutilization of PMRs. This includes implementing effective governance mechanisms, mitigating corruption and political pressures, and fostering a supportive organizational culture that promotes professional development and fair working conditions. Such a multifaceted approach is essential for improving project management practices, increasing PMR commitment and contributions, and ultimately enhancing project success rates in the Nigerian construction industry.

Keywords: Nigerian construction industry; poor performance; project manager underutilization; institutional structure; project management; project managers' contributions; motivational support

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Ebuka Valentine Iroha

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS

NCI	Nigerian construction industry
PM	Project management
PMRs	Project managers
GDP	Gross domestic product
NCCG	Nigeria country commercial guide
NIQS	Nigeria institute of quantity survey
PMBOK	Project management body of knowledge
PMI	Project management institute
WEF	World economic forum
EIA	Environmental impact assessment agency
QSREN	Quantity survey registration of Nigeria
CORBON	Council of registered building of Nigeria
ISPON	Institute of safety professionals of Nigeria
MLHUD	Ministry of lands, housing and urban development
ISO	International standard organization
HRD	Human resource development
SPSS	Statistical package for the social sciences
PMR	Project manager
FERMA	Federal roads maintenance agency
FHA	Federal housing authority
NRC	Nigeria railway corporation
FAAN	Federal airport authority of Nigeria
PMDAN	Project managers development association of Nigeria
NDDC	Niger delta development commission
EPMR	Expected contribution of project manager

APMR	Actual contribution of project manager
ANPMR	Actual contribution of non-project manager
STDD	Standard deviation of difference
IAPM	International association of project managers
PMP	Project management professionals
CIPMN	Chartered institute of project managers of Nigeria
NUC	National university commission
CPI	Corruption perception index

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1. INTRODUCTION

1.1 Background of the Study

The Nigerian construction industry is considered one of the productive sectors of the economy. Although Nigeria has the largest economy in Africa, it remains a low-income country on the path toward middle-income status, highlighting its potential for significant growth and development. Infrastructure development within the construction sector is vital for Nigeria's growth and development. The industry has been considered a key figure in the nation's economy, due to its impact on other industries through the provision of essential infrastructure.

However, despite significant but inconsistent GDP growth since 1960, driven by sectors such as agriculture and oil revenue, Nigeria's investment in infrastructure has been relatively low (Awojobi et al 2014). For instance, between 2007 and 2017, public spending on infrastructure averaged only 3.6% of GDP, below the African average of 4.3% (Bello-Schunemann and Porter 2017). Consequently, the Nigerian construction industry has made a smaller contribution to both infrastructure development and GDP (Oladinrin et al., 2012). The Nigeria Country Commercial Guide (NCCG 2022) reported that Nigeria has a considerable infrastructure shortage, with the total value of infrastructure in the country accounting for approximately 30% of its GDP. This falls short of the international benchmark of 70% set by the World Bank (NCCG 2022). Key challenges in the country's construction infrastructure include inadequate road networks and a shortage of affordable housing.

According to the Nigeria Country Commercial Guide, Nigeria's population is estimated to reach 400 million by 2050, and the current infrastructure may not adequately support this growth, given the country's annual estimated population growth rate of 2.5%. To address this challenge, the government has launched a 30-year infrastructure plan, known as the National Integrated Infrastructure Master Plan, aimed at increasing the infrastructure stock to 70% of the GDP by 2043 to accommodate the population growth rate (NCCG, 2022). One critical approach to enhancing the contribution of Nigeria's construction sector to the GDP is the government's substantial investment in physical infrastructure for sustainable development (Saka & Adegbembo, 2022).

1.2. Problem Statements

Nigeria's construction industry (NCI) is one of the critical sectors that drives economic growth and development. Unfortunately, the industry has been identified with poor performance in project delivery. This poor performance has been linked to project delays and cost overruns, which have led to many abandoned projects across the country. According to Mamman and Umesi (2022) and Sharafadeen et al. (2015), the inability to complete projects within the timeframe and stipulated budget is a major problem in the industry. Delays and cost overruns have constituted the major criticisms of project delivery. Ameh and Ogundare (2013) claimed that 70% of construction projects in Nigeria experienced delays in their execution stage. Bajere et al (2016) conducted an evaluation of delay factors on project completion time, finding that, out of 196 sampled projects, 190 experienced an average time overrun of 485.75%. Mamman et al (2018) investigated the completion cost of public sector construction projects, and the results revealed that 76.5% of the selected sample experienced an average cost overrun of 43.3%. The current state of the Nigerian construction industry falls short of meeting international quality standards and performance expectations.

These challenges of delays and cost overruns in the industry have led to hundreds of disseminated abandonments of construction projects throughout the country. According to the Nigeria Institute of Quantity Survey (NIQS 2021), there has been a significant increase in abandoned projects over the past three decades, with the number of abandoned projects reaching 56,000, and this problem has been mainly attributed to cost-related issues. Many studies have identified the causes of the poor performance of Nigeria's construction industry in projects. Major factors include a lack of proper project cost analysis, late payments, price fluctuations, exchange rate variations, and delayed supply of materials (Ayodele and Alabi 2011; Ikechukwu et al 2017).

Among these causes, the utilization of knowledge on project management and the project manager's commitment has been highlighted as a key issue (obebe et al 2020). Projects often run off track, failing to meet goals and objectives, largely due to the underutilization of project managers. Lack of project management experience as well as improper planning, poor site management, and lack of motivational support were

identified as causes of project delay in the NCI (Unegbu et al 2023; Ezeokoli et al 2021). Many projects lack proper planning, scheduling, and effective control, often due to the absence of contributions from project managers trained in project management. Many projects in Nigeria have failed due to poor project management and a lack of qualified project managers. Dalibi (2016) emphasized that the inadequate use of project management professionals and the engagement of non-project managers in Nigerian construction projects significantly contribute to project delays and cost overruns. The lack of project management experts and the awarding of projects to incompetent contractors contribute to the poor performance of the NCI.

Corruption and political influence for personal gain have been identified as major contributors to the shortage of project management in the industry. These factors have adverse effects on project costs and resource allocation, resulting to project managers to prioritize personal gains over contract ethics, project management practices, and project needs. Moreover, religious and tribal discrimination were among the contributing factors to the underutilization of project managers in the Nigerian construction industry. According to Ndife (2021), the infiltration of such discrimination undermines project team cohesion and communication, ultimately leading to competency issues within organizations and project failures. Furthermore, inadequate recognition, lack of incentives, and insufficient training compound the challenge. Nweze (2016) emphasizes how unfair working conditions, including low salaries and limited career growth opportunities, reduce project managers' commitment to projects. These institutional and systematic issues do not only hinder effective project management but also contribute to project failures and poor quality projects in the Nigerian construction sector. Addressing these challenges requires comprehensive policy and organizational reforms that will promote transparency, competency, inclusivity, merit-based recognition, and equitable opportunities for project managers.

1.3. Existing Gaps in the Previous Studies and Research Novelty

There is extensive literature on the challenges facing the Nigerian construction industry. Ezeokoli et al. (2021) investigated contemporary construction practices in the southeast region of Nigeria. Their study focused on poor project planning, inadequate quality control, and corruption issues are significant challenges faced by construction projects in this area. In a similar research, Adagba et al. (2023) analyzed the factors contributing to the failures and abandonment of construction projects in Kaduna state, Nigeria. Their findings underlined corruption as a prevalent issue in kickback factors, establishing in forms such as bribery, which undermines the regulatory system governing contract bidding. Kasimu and Isah (2012) examined the contractor factors attributable to delays in construction projects, with improper factors being identified as common factors due to the underutilization of project managers. Issues such as ineffective communication, design errors, absence of motivation, material and equipment shortages, and slow decision-making were identified as prevalent causes of delays in construction projects across Nigeria. Obebe et al (2020) examined the causes of project failure in Nigeria. The study identified a shortage of project management practices and inadequate project managers' contributions.

However, the existing gaps in previous studies primarily revolve around a lack of comprehensive analysis of the institutional factors and their individual performance within the Nigerian Construction Industry (NCI). Many studies have focused on the poor performance of the industry, particularly highlighting issues such as project delays, cost overruns, and the abandonment of projects. These studies often attribute these challenges to inadequate project management practices without exploring deeply into the root causes, particularly the underutilization and underperformance of project managers. Additionally, there is a dearth of research that integrates both qualitative and quantitative data to provide a holistic understanding of how institutional frameworks, such as corruption, political influence, and weak governance, directly impact the roles and effectiveness of project managers. Previous research has also tended to ignore the intricate relationship between external institutional factors and the internal motivational support provided to project managers, leaving a gap in understanding how these factors interact to influence project success outcomes. This research aimed to conduct an institutional analysis to

identify the causes of project manager underutilization and underperformance in the NCI, examining how these factors lead to low commitment, poor contributions, and subsequent project delays and cost overruns, while proposing potential solutions.

Therefore, the research novelty of this study lies in the approach to bridging these gaps. The introduction of a novel institutional analysis using a four-level framework of institutional analysis to explore the institutional factors contributing to the underutilization of project managers in the NCI. This study uniquely categorizes these factors leading to underutilization of project managers into two subsystems of underperformance and lowering commitment. This offers a structured understanding of how embedded institutional factors, such as corruption and weak governance, perpetuate underperformance and low commitment among project managers. Furthermore, the innovative combination of descriptive analysis with game theory and regression models to quantify the underperformance of project managers and its correlation with low motivational support from organizations. This study's novelty lies in its empirical investigation of the two-way causal relationship between underperformance and motivational support, while also highlighting the limited effectiveness of such support in the face of broader institutional challenges. Together, these studies offer a more integrated perspective, combining institutional analysis with project management practices and project managers' performance, thus, providing a more comprehensive approach to addressing the challenges in the Nigerian construction industry.

1.4. Research Objectives and Questions

1.4.1. Study one Objective and Questions

To improve job performance of construction organizations in the industry, it is crucial to understand the institutional environment and the factors that influence project management practices and the utilization of project managers. Hence, institutional analysis will be conducted to examine the factors, within the institutional framework of the Nigerian construction industry that impede the effective utilization of project managers and the implementation of project management practices. Another essential requirement is to understand how these factors interact with each other to influence the projects.

The approach involves identifying the interrelationships between the embedded factors, institutional laws and regulations, and construction organizations, and understanding how their influence results in the underutilization of project managers. Understanding how these factors affect institutional laws and regulations is essential in facilitating a suitable solution to improve the utilization of project managers and proper implementation of project management practices.

Based on this idea the following research questions are raised: (1) Are there factors that influence project management practices and utilization of project managers? (2) How do these factors affect project managers in projects? (3) What are the suitable recommendations that could address the adverse effects of the factors on the utilization of project managers? The answers to these questions are essential in developing potential solutions that improve the utilization of project managers and implementation of project management practices. Therefore, study one was conducted with the following objectives.

1. To identify the factors within the institutional framework that hinder the effective utilization of project managers and the implementation of project management practices.

2. To analyze how these factors interact and influence project outcomes.

3. To develop recommendations to address the adverse effects of these factors on the utilization of project managers.

4. To propose strategies for improving the effectiveness of project management in the Nigerian construction industry.

1.4.2. Study two Objectives and Questions

The present environment in the Nigerian construction industry (NCI) has become unstable due to low performance. This has necessitated that construction organizations prioritize performance as a key success factor for project completion. This study aims to examine the contributions of project managers and the expectations of organizations during projects. The underutilization of project managers poses significant challenges,

including poor project planning and inadequate project execution, resulting in continuous project delays and cost overruns. An empirical study will be conducted involving project managers and construction organizations to gain insights into the contributions of project managers and the expectations of organizations during project management. This will help to understand the causes of low performance in project management practices. The research seeks to explore the reasons behind the lack of project managers' contributions in the industry and propose potential solutions.

By identifying the root causes of the insufficient contributions of project managers to projects, this study aims to understand how these deficiencies lead to project delays and cost overruns. Ultimately, the goal is to provide strategies for improving the effectiveness of construction project management in Nigerian construction organizations. Therefore, this study was conducted with the following objectives:

1. To investigate the contributions of project managers to project performance.
1.1. To identify the actual contributions of project managers in the three project stages.
1.2. To ascertain the importance of the project management practices in the stages.

2. To explore the expectations of construction organizations from project managers.
2.1. To understand the ideal organization’s expectations from project managers in the three project stages.
2.2. To ascertain the importance of the project management practices in the stages

3. To identify the causes of low performance in project management practices.

4. To ascertain project manager’s motivation factor and its importance to project managers and their performance

1.5 Structure of the Dissertation

To achieve the objectives of this research, the contents of the dissertation are organized in six chapters.
Chapter 1 provides an introduction of the construction industry, general information of

the research, its problem statements, justification of the study and the research objectives and questions.

Chapter 2 introduces the literature review of the studies and previous studies related to the objectives of this dissertation.

Chapter 3 and 4 present the respective studies, which have been conducted to achieve the objectives presented in chapter 1.

Chapter 5 concludes the major findings, recommendations, general implications of the dissertation as well as directions for further research.

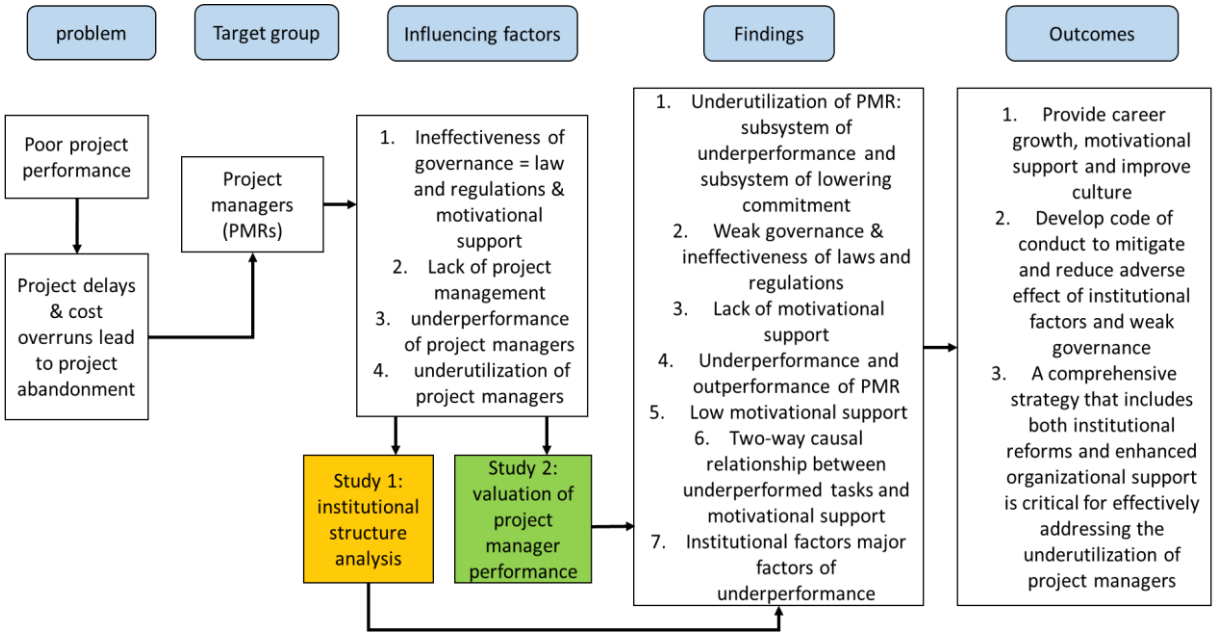

Figure 1. Relationship between the two studies in the research

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CHAPTER 2: LITERATURE REVIEW

2.1 Industry performance

The construction industry has been considered to have low productivity across nations of the world due to poor performance being recorded in the sector (Funso et al 2016). This poor performance has been attributed to a lack of effective utilization of workers in the sector (Ola-awo et al 2020). In recent years, due to the highly competitive nature of the global construction industry, numerous research studies have focused on improving the performance of construction organizations. The World Economic Forum's (WEF) 2011–2012 Global Competitiveness Report identified Africa as having the second-lowest construction productivity, highlighting a significant challenge in the region's efficiency in this sector. This trend is reflected in the Nigerian construction industry, which has a persistent history of project failures marked by delays and cost overruns that affect various types of projects.

Delays in construction projects are defined as actions or conditions that result in project completion occurring later than the agreed-upon contract date (Isyaku et al., 2020). Such delays are pervasive in the construction industry, often being the most common, costly, and risky problems faced, with severe impacts on all contractual parties (Okunbe & Verste, 2008). These delays foster adversarial relationships, distrust, litigation, cash-flow issues, project abandonment, and a general sense of apprehension among stakeholders. They frequently occur at all phases of construction projects and are often deemed inevitable, resulting in cost and time overruns (Sharafadeen et al., 2015). Consequently, delays are considered the most significant factor affecting project performance.

Cost overruns, defined by Saidu and Shakantu (2022) as the difference between the actual cost incurred during the project and the project's budgeted cost, are closely tied to these delays. Delays and cost overruns are major criticisms of project delivery. Ensuring that construction projects are completed on time, within budget, and to the expected quality standards is imperative. The poor performance observed in the Nigerian construction industry (NCI) highlights the crucial importance of project management skills, which have been hindered by passive participation from project managers. A lack of project management skills is evident throughout the project life cycle and impacts

project success from the pre-project stage to the execution stage and the post-project stage. Employing project management knowledge and ensuring the commitment of project managers are critical issues in addressing these challenges.

2.2 Project Management

Project management has gained increasing significance and essential part of effective organization because of the changing nature of managing organizations. Project management has been defined in various ways by different authors, each offering distinct perspectives. The Project Management Body of Knowledge (PMBOK) (2021) defines project management as the application of knowledge, skills, tools, and techniques to project activities to meet or exceed stakeholders' needs and expectations on a project. According to the Project Management Institute (PMI) (2023), meeting and surpassing stakeholders' needs and expectations entails coordinating time, cost, and quality. This involves addressing the expectations and identifying the requirements (needs) of stakeholders, as well as the unidentified requirements (expectations). Kerzner (2017) described project management as a combination of art and science. It involves the art of accomplishing tasks through people within a formally organized group and the science of managing extensive data to plan and control, ensuring a balance between project duration and cost. project management comprises several key elements, including strategy, processes, stakeholder management, scheduling, risk management, resource allocation, and budgeting, as well as tools, standards, and procedures, and emphasizes that effective project management is the most essential critical success factor in construction projects.

Project management professionals play a fundamental role in the successful execution of projects across various industries including the construction industry. Successful project identification, preparation, and implementation are imperative for realizing the development plans. Without these fundamental steps, development initiatives in project performance may remain mere wishes. The objectives of project management include the systematic application of management skills and suitable techniques to plan and control all stages of a project (Dalibi 2016). This approach is designed to efficiently plan and control resources, ultimately resulting in the development of a well-designed and competently constructed outcome. This outcome aligns with the

client's requirements in terms of function, quality, time, cost budget, and future maintenance. Successful implementation is contingent upon being overseen by a project manager possessing a profound professional understanding of projects, increasing the prospect of staying within cost and time schedules and achieving successful results (Anaynwu 2012). The foundation for successful project management is the formation of a competent project team, led by a project manager who plays a central role in ensuring project success.

In the Nigerian context, to be identify as a project manager, the individual must obtain project management professional training. Several Nigerian universities and training institutions offer programs in project management, which are instrumental to preparing individuals for certifications. Various international and local organizations are involved in certifying project managers in Nigeria. The International Association of Project Managers (IAPM) has a Nigerian network that actively promotes knowledge and best practices in project management and Chartered Institute of Project Managers of Nigeria (CIPMN). In addition, international certifications such as PMP (Project Management Professional) and PRINCE2 are widely recognized in Nigeria. They offer globally recognized certifications and provide preparation courses, professional development training, and networking opportunities for project managers in the country. However, the certification and accreditation schemes for project managers face several challenges and opportunities. According to CIPMN, there is a growing awareness of the need for certifications that address the unique challenges of the Nigerian environment. A significant challenge in the Nigerian context is the inconsistency in the application of accreditation standards due to accessibility, awareness, and uneven distribution of accreditation resources across the country. Additionally, the lack of local content in some international certification programs may limits applicability to the Nigerian context. To address some of the challenges, CIPMN is collaborating with National University Commission (NUC) to ensure that the accreditation and certification to practice as a professional project management practitioner in Nigeria are provided by CIPMN (Agbedo 2023).

2.3 Importance of Project Manager

Project managers' responsibilities in construction projects are vital in ensuring the success of the projects. These professionals provide efficient project planning, breaking down complex tasks into manageable sizes, and creating comprehensive project schedules (Anyanwu 2012). Project managers have the professional ability to organize resources effectively, encourage team members, and ensure proper utilization of materials throughout the project lifecycle. This organizing approach minimizes waste, delays, and unnecessary expenses, thus, maximizing the efficiency of project procedures (Giri 2019). Project managers identify and manage risks and devise proactive strategies to mitigate them through the implementation of a risk management approach (Obebe et al 2020). Application of risk management strategies helps in safeguarding project timeline and budget.

Additionally, project managers play a key role in stakeholder engagement, fostering effective communication and collaboration among project team members, clients, contractors, and regulatory authorities (Kerzner 2017). This helps to ensure that all stakeholders are aligned with project objectives and informed about project progress. Project managers prioritize quality assurance, ensuring that construction activities meet industry standards and regulatory requirements through the implementation of quality control measures and regular inspections to identify any deviation (Bajere 2016). This helps to minimize rework and ensures high-quality project outcomes. Moreover, project managers possess the skills of problem solving and decision-making in addressing challenges and adapting plans necessary to keep the project on track (Adeleke et al 2018). The project manager's ability to anticipate and respond to changes contributes to the project's success.

Construction organizations require experienced project managers and project teams to deliver projects successfully (Ayo 2005). According to Mawdesley and Micheal (2007), the successful completion of a project demands regular planning and control. Effective project management in construction involves the efficient use of labor, materials, and equipment. Construction projects demand specific knowledge, skills, and expertise from qualified professionals who have the capacity to prioritize project cost control. Project managers' responsibilities comprise planning, monitoring, evaluative review, reporting,

and providing technical assistance activities to identify challenges and prepare and recommend solutions at the earliest stage (World Bank 2007). Giri (2019) stated that increasing project performance, which is increasingly complex in nature, depends on the essential utilization of those important managerial and technical skills of the project manager at every project stage. Planning is critical for project success, as it enables project managers to proactively identify and address potential risks, allocate resources efficiently, and closely monitor project progress (Kerzner 2017). It is important for a project manager to set clear and achievable project objectives.

The project execution stage involves the implementation of project details in the project charter. At this stage, project managers are require manage resources efficiently, maintain effective communication with the project team and relevant stakeholders, and monitor project progress to ensure that the project is on track. The high intensity of project activities makes it the most complex stage in the project lifecycle. According to Abisuga (2014), utilizing project managers during the project execution stage facilitates smooth progress through effective communication, early error identification, and effective implementation of control measures. At this stage, the project manager's role is to foster a cordial working environment among the project team, workers, and relevant stakeholders while motivating and encouraging the workers. The post-project stage involves project closure, which signifies the completion of the project. Project activities are checked to ensure that all deliverables and project objectives are met before the formal closing of the project and the handover.

Therefore, in construction, project managers has a broader scope, overseeing the entire project from initiation to completion. They are responsible for project planning, budgeting, resource allocation, and communication between all stakeholders. The project manager ensures that the project aligns with the client's goals and meets the timeline, cost, and quality expectations. However, construction manager primarily focuses on the day-to-day operations at the construction site. Their role involves managing the construction process, overseeing subcontractors, ensuring that work is done according to plans, and that safety standards are met. They are directly involved in managing the workforce, materials, and ensuring that the project meets quality standards and stays on schedule.

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CHAPTER 3. FLAWED INSTITUTIONAL STRUCTURES: PROJECT MANAGERS UNDERUTILIZED IN NIGERIA'S CONSTRUCTION INDUSTRY.

3.1 Introduction

Research on enhancing the performance of construction organizations through employee improvement has garnered significant interest over the past few decades. This interest particularly focuses on identifying the factors that affect employee performance and finding ways to enhance it. Previous studies have highlighted various factors that impact the performance of construction projects, including delays, cost overruns, improper planning, and a lack of project management knowledge (Obebe et al., 2020; Nguyen & Chileshe, 2015; Ezeokoli et al., 2021).

Additionally, research has identified several embedded factors that influence the performance of construction organizations and project management practices. These factors include corruption, political influence, religious and tribal sentiments, and the ineffectiveness of contract and employment laws (Ndife, 2021; Usman et al., 2012; Nweze, 2016). However, to the best of our knowledge, no study has attempted to ascertain the interrelationship between these embedded factors, institutional laws, and construction organizations, and how their combined influence results in the underutilization of project managers. Investigating these relationships is crucial for developing effective solutions to overcome the constraints that hinder the performance of construction organizations and project managers. For instance, understanding the causes of underperformance and the extent to which these factors affect project managers' commitments can provide valuable insights. This understanding is imperative for addressing the challenges faced by the construction industry and improving project outcomes.

To address these challenges, an institutional analysis was conducted to identify and examine the factors, within the institutional framework of the Nigerian construction industry, that hinder the effective utilization of project managers and the implementation of project management practices. Data were collected from the previous literature and the findings were supported by data collected through semi-structured interviews in Nigeria. The data were coded into a four-level framework for institutional analysis. This approach

was used to examine the interrelationships between the identified embedded factors, institutional laws and regulations, and construction organizations, and to understand how these influences contribute to the underutilization of project managers. In addition, deviation analysis was conducted as an additional method to classify the impacts of the embedded factors at each institutional level and to determine how these impacts contribute to the underutilization of project managers in the Nigerian construction industry (NCI).

3.2 Hypotheses

Based on the results of the literature review, it was possible to hypothesize that all influential factors are categorized into four categories: embeddedness, such as Corruption, custom, and religion; institutional environments, such as laws and regulations; governance, such as the implementation of laws and regulations; and resource allocation, such as the organization's resource allocation.

1. Corrupt practices influence the project awarding processes and project management practices. Corruption can lead to the awarding of contracts to incompetent contractors, reduced quality of work, and increased project costs and delays.
2. Customs and religion significantly influence the project manager's contributions and commitment. These can shape organizational culture and employee behavior, influencing how projects are managed and executed. Religious beliefs can affect decision-making processes, ethical standards, and the motivation of team members, thereby influencing project outcomes.
3. Laws and regulations provide a framework within which projects operate, influencing everything from contract bidding process, and compliance requirements to operational constraints. Weak laws and regulations can cause delays, increase costs due to the need for compliance, and increase the risk of deviating from the laws and regulations by the organizations.

3.3 Materials and Methods

This study employed an inductive method using a bottom-up approach. Specifically, an exploratory approach was applied to identify and investigate the institutional factors that affect the utilization of project managers in Nigeria's construction organizations.

This study employed an inductive method using a bottom-up approach. Specifically, an exploratory approach was applied to identify and investigate the institutional factors that affect the utilization of project managers in Nigeria's construction organizations, which, results in influencing project management in Nigeria. The embedded factors were coded with institutional analysis using a four-level framework of institutional analysis developed by Williamson (2000). This approach was complemented by theoretical coding, serving as the essential process within a grounded theory methodology (Glaser 1978; Strauss and Corbin 1990). These data were collected from the previous literature and were supported by data collected through interviews.

Deviation analysis was conducted as an additional analysis to classify the impacts of the embedded factors at each respective institutional level and how the factors' impacts contribute to the underutilization of project managers in the NCI. This analysis was used to examine the interrelationships between embedded factors, institutional laws and regulations, and construction organizations. Additionally, it demonstrated how these factors impact project managers' performance and resource allocation within construction organizations. A similar approach was adopted by Hurrelmann (2002) to identify the factors challenging the European agri-food system when restructuring agricultural production in central and eastern European countries. This analysis provides insight into the vicious and spontaneous effects of embedded factors on the institutional environment and the performance of construction organizations in Nigeria.

3.3.1 Data Collection

Relevant studies that have researched the causes of poor performance of construction organizations associated with project delays, cost overruns, and project management practices were deeply studied. This research on previous related studies contributed to identifying some of the causes of poor performance of construction organizations, improper project management practices, and underutilization of project managers. In

addition, semi-structured interviews were conducted with project managers in government construction sectors, private contracting firms, and private consulting firms, where 36 respondents were interviewed. Participants were selected based on specific conditions relevant to the research objectives. Semi-structured interviews were conducted with project managers from government construction sectors, private contracting firms, and private consulting firms, involving a total of 36 respondents. The interview format was piloted by one lecturer and two construction project managers, each with over 10 years of experience. They emphasized the significance of understanding the tasks assigned to project managers by organizations and the key performance indicators used by these organizations. Face-to-face interviews were conducted with respondents with over 10 years of experience in project management practices.

To have good practice in this research, we tried to bring together the richest possible data, which could be achieved by familiarity with the setting through face-to-face interaction with the subject matter (Lofland and Lofland, 1995). Based on recommendations from the pilot interview, a minimum threshold of 10 years of experience was selected to ensure the collection of comprehensive data, given the extensive expertise of the respondents. These respondents currently hold significant positions within their respective organizations, as shown in Table 1.Thus, their views were considered to capture the characteristics of each organization. This method helped to provide an in-depth understanding of existing perceptions, practices, and potential areas for improvement.

Table 1: Interview Respondents

RESPONDENTS	NUMBER OF RESPONDENTS	YEARS OF EXPERIENCE
Executives/Directors	3	20 and above
Senior Project Managers	7	15 to 20
Project Managers	26	10 to 15

Interviews were conducted with federal government construction sectors and major private construction organizations across different regions in Nigeria that manage large-scale projects. The aim was to gather empirical data to enhance our understanding of the institutional settings and operations of these organizations and how these factors influence the utilization of project managers. Data were collected over five months to gain a

comprehensive understanding of the causes of the underutilization of project managers in Nigeria's construction organizations. While there were a few instances where meetings were held with three or four respondents together, most interviews were conducted individually. This approach provided deeper insights into the factors contributing to the underutilization of project managers.The data were collected from government construction agencies, including the Federal Roads Maintenance Agency (FERMA), Federal Housing Authority (FHA), Nigeria Railway Corporation (NRC), and the Federal Airport Authority of Nigeria (FAAN). In addition, project managers (PMRs) working with private contracting firms participated in the interviews. The private sector has the highest number of project managers in the construction industry because it includes both indigenous and foreign contracting organizations. Private contracting firms in the industry specialize in areas such as commercial construction, industrial construction, infrastructure construction, power construction, and residential construction. Project managers from various private consulting firms, including quantity surveying firms, geotechnical consulting firms, architectural firms, and mechanical and electrical consulting firms, were also involved in the interviews. These organizations provide comprehensive guidance and installation on construction projects.

These interviews were conducted predominantly in regions with high rates of government and private investors' projects due to the boom of social and economic activities in the regions. These regions include the southwest that has the largest seaport and airport, making it the economic center of Nigeria, and the southeast, which is known with the business, crude oil, and technological hub of the country. In addition, is the southern region, which is the largest crude oil and natural gas producing region, and Abuja, which is the federal capital territory of Nigeria and falls into the north-central region of the country.

3.3.2. Interview Questions and Sampling Procedures

The interview questions conducted in this study were formulated based on institutional factors that cause the underutilization of project managers. These questions involve analyses regarding perceptions of project management practices among construction organizations, exploring both the practices and the involvement of project

managers. In addition, the interview process examined the potential motivations provided to project managers to improve their job performance. The specific interview questions were based on questions regarding:
(1) The project management procedures being practiced in their organizations.

(2) possible factors that affect the practices of project management procedures in the industry.

(3) The level of project management procedures conducted by project managers during the pre-project stage, execution project stage, and post-project stage of projects.

(4) The motivational support organizations give to project managers, how important the motivations are to them, and how they affect their job performance.

In one of the discussions with four respondents in a meeting regarding possible factors that affect contracts and project management practices in the industry, the main sources of data were political influence and interest, corruption, and inadequate planning and project monitoring. The respondents claimed that the political influence forces project managers to ignore project demands to meet political interests. The interviewees claimed that inadequate planning and project monitoring are a result of a lack of project management experience and less commitment from the professionals. The same political influence was mentioned, including corruption, in our meeting with one of the foreign construction companies in the country. Corruption, political interest, and lack of project management practice were constantly mentioned as major causes of project delay and cost overruns (Usman et al 2012; Nweze 2016).

Religious and tribal discrimination was mentioned more by respondents from the government sector and indigenous construction organizations. Absence of motivational support, particularly on career growth and promotion, was regularly mentioned. Recurrence of responses among the interview participants at a certain stage of the data collection, led to the conclusion that data has reached saturation stage, where further interviews would likely provide no significant new insights. Therefore, we concluded that 36 interviews were adequate to attain data saturation and gain a thorough understanding

of the research objectives. The constant reiteration of responses from the interviewees indicates that saturation has been reached (Hernandez 2009).

The institutional structure of the industry was organized into the four-level framework and the data were input into the analysis framework: embeddedness, which comprises informal institutions, norms, traditions, and religion; an institutional environment, that consists of the formal rules of the game, laws, constitutional rights, policies, and regulations; governance, which comprises the play of the game and governance structure; resource allocation and employment, which consist of incentive alignment and working conditions. The collected data underwent bottom-up institutional analysis, employing the four-level framework of institutional analysis outlined in Table 2, for a theoretical coding in the grounded theory approach (Strauss and Corbin 1990). This method was taken for constant comparison and relative analysis of the data from previous studies, and data collected from interviews were theoretically analyzed. At this stage, noting was conducted to document theories by establishing interconnections among embedded factors, institutional environment, and governance structure (Hernandez 2009). Potential risk factors of the embedded factors at each institutional level were identified. The factors identified were examined for verification of their contribution to the underutilization of project managers in the organizations.

Table 2: The new institutional economics: Four-level framework of institutional analysis by Williamson 2000

Level of analysis	Frequency (years)	Purpose	Method of analysis
Embeddedness	100 to 1000	Informal institutions, customs, traditions, norms, religion.	Social theory
Institutional environment	10 to 100	Formal rules of the game; judiciary, polity, laws and property rights, constitutions.	Economics of property rights, positive political theory
Governance	1 to 10	Play of the game; private ordering, aligning governance structures with transactions.	Transaction cost economics
Resources allocation and employment	Continuous	Prices and quantities; incentive alignment	Neoclassic economics

In this additional step, we argue that to solve the causes of the underutilization of

project managers, the governance structure needs to function correctly to reduce the effect of embedded factors on the institutional environment. This argument is supported by previous research on corruption in the construction industry of Nigeria and its causes and solutions (Ayodele and Alabi 2011). Hence, to address the underutilization of project managers in the construction industry needs an improvement in the governance structure to reduce the influence of embedded factors within the institutional environment. This can be achieved by implementing effective regulations and policies to reduce the negative impact of factors like corruption, political influence, and religious and tribal discrimination. This, in turn, can contribute to the improvement of construction organizations performance and promotes transparency, accountability, and efficiency in project management practices.

3.4. Results and Discussions

Figure 1 illustrates a four-level social analysis of the Nigerian construction industry (NCI), focusing on how certain embedded factors influence the institutions governing construction organizations. The solid arrows connecting the higher and lower levels signify the enforcement of the factors, while the reverse dashed arrows indicate feedback. Level 1 identified factors including corruption, political influence, company culture, religion, and tribe, which exert negative pressure on Level 2, influencing the governing laws and regulations in the NCI. These informal factors weaken employment and work laws, contract laws, and government policies, and this affect construction practices and procedures. These factors adversely affect construction organizations in Level 3, where effective laws and regulations are crucial.

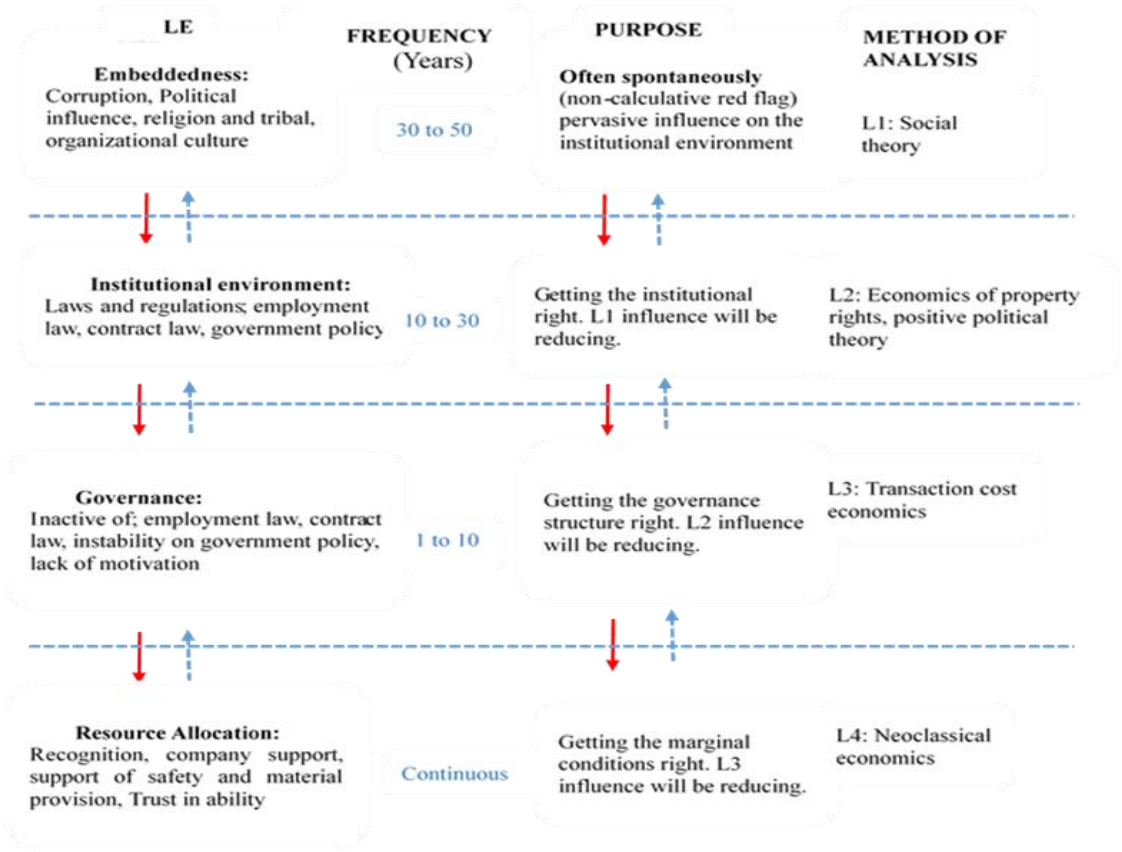

Figure 2: The four levels of institutional analysis of the NCI. Solid arrows (imposes constraints); Dash arrows (feedback results)

This study found that the inefficacy of employment and work law, influenced by embedded factors, this result to unfair working conditions and discrimination due to religion and tribe against project managers within organizations. The inefficiency of contract law resulting from the negative impact of embedded factors causes government officials and politicians to pursue personal gain. This gives rise to corruption and political pressure during the contract bidding process, affecting project budgets and the organization's employment practices. Moreover, the negative factors embedded in the industry contribute to the instability of government policies and regulations, resulting in unjustified delays in obtaining project permits. These delays poses pressure on costs and timeline of projects, resulting to challenges to the planning and decision-making processes of project managers. Ineffectiveness in laws and regulations influences how project managers are treated at Level 4, lead to less commitment and motivation project managers.

The diagram illustrates that consistent and effective implementation of resource allocation directly to project managers at Level 4 is capable of improving the utilization and performance of project managers in the NCI. Continually securing the marginal conditions of project managers' rights will mitigate the impact of the inefficiencies of laws and regulations on construction organizations during projects. Additionally, the effectiveness of construction organizations will decrease the influence of embedded factors on the laws and regulations (Olatehu et al 2011).

3.4.1. Embeddedness

At this level of the institutional analysis of the NCI, various informal factors negatively influencing the industry's institutional environment were identified. Corruption, political influence, company culture, religion, and tribe were identified as having a negative influence on construction processes within the industry (Nweze 2016). The impact of these factors was observed to affect project management practices within construction organizations. The effects of corruption and political pressure for personal gain were discovered to have led to bribery within the industry, especially during contract bidding (Ogunde et al 2017). This unethical practice is the major issue of awarding of contracts to incompetent contractors and impacts project budgets, regularly resulting in compromised project quality and project abandonment. Additionally, tribal and religious factors contribute to an unfair working environment characterized due to discrimination, conflicts among employees, and biased employment. These embedded factors have been found to not only undermine institutional laws and regulations but also to impede project management within construction organizations, directly affecting the performance of project managers.

3.4.1.1 Corruption

Corruption among the construction organizations has a significant negative effect on the industry, and it was identified as a major concern affecting construction practices in the country. Corruption is the abuse of power, position, or resources by an individual or organization for personal gain or to achieve an advantage that is unethical, immoral, or illegal. It involves dishonest or fraudulent conduct that undermines integrity, fairness, and transparency in both public and private sectors. According to the most recent corruption

perception index (CPI) report for 2023, Nigeria scored 25 out of 100 on the index, where a score of 0 reflects a high level of corruption and 100 represents a very clean status. This low score places Nigeria at 145th out of 180 countries, indicating pervasive concerns about corruption in the country's public and private sectors.

Ismaila et al. (2022) argued that corruption stands out as one of the critical factors contributing to delays in construction projects. This has the potential to result in disputes and financial losses for both project owners and contractors. The interview respondents mentioned how the influence of these factors alters the competitive landscape of contract bidding and introduces bribery and nepotism. This consistently results in the awarding of contracts to incompetent contractors, who are often the highest bidders in terms of bribery (Nweze 2016). These illegal activities result in inflated project costs, poor-quality work, project delays, or even project abandonment. The compromise of project quality often leads to costly repairs or reworks that contribute to premature deterioration. This situation places significant pressure on project managers to engage in corrupt practices, ultimately undermining their commitment to project success and ethical project management practices.

3.4.1.2. Political Influence

Political influence on the construction industry has the capacity to could have several negatively impacts that could affect industry’s institutional environment. In the context of the Nigerian construction industry, it was found that political elites prioritize their personal gain over addressing national concerns and abuses contract law and regulations. This political pressure, driven by self-interest, was revealed during the interview as a significant contributor to the failure and abandonment of many projects. According to Obebe et al. (2020), organizations often secure contracts not through merit or competitive bidding but due to connections with corrupt officials. This illegal political pressure on construction organizations contributes to decision-making challenges to balance project needs and political demands. This situation potentially compromises resource allocation and compels project managers to consider political interests over project objectives.

3.4.1.3. Religious and Tribal Discrimination

Religious and tribal practices within construction organizations result in many negative challenges that are capable of obstructing organizational objectives. It was found that religion and tribe affiliations lead to discrimination among employees, including project managers, in construction organizations in Nigeria. These challenges were mostly revealed by interview respondents in the government construction sector and private organizations. This creates in-groups and out-groups within the workplace, causes bias in relation to job assignments and promotions, and limits employees' chances to grow within the organization (Salawu 2010; Ndife 2021). The religious and tribal sentiments poses challenges on project team cohesion. This affects communication, collaboration among the team, and overall project performance. This has been identified as the major reasons for workplace fragmentation, unfair treatment, and undermining the competency of project managers. This situation was usually seen in government construction agencies and indigenous private construction organizations in the NCI.

3.4.1.4. Organizational Culture

The working culture within construction organizations has a significant impact on the behavior and expectations of project managers. The interviewees mentioned unfair salaries, insufficient opportunities for career growth, unfair working conditions, and insufficient incentives as organizational practices that influence their commitment and loyalty. According to the feedback, this creates a feeling of being undervalued, resulting in frustration. Consequently, this negatively affects their enthusiasm for work and commitment to the organization's goals. Woo and Soetanto (2010) opined that the unsatisfied needs of employees affect their commitment, and thus they stated that employees' needs are their energy-driving factors towards improved performance within the organization. Project managers who do not see a clear path for growth within the organization become disengaged and less committed to their current roles and responsibilities. It was found that Nigeria's economic challenges led to budget constraints that contributed to low salaries, less support for career growth, and fewer incentives. Moreover, the interview results revealed that the high unemployment rate contributes to unfair working conditions in the NCI. Diversion of funds that could otherwise be allocated to employee benefits due to corruption was identified as contributing to the

meager rewards and lack of career growth in the organizations (Ayodele and Alabi 2011).

3.4.2. Institutional Environment

Institutions can be seen as the mechanism, or "rules of the game", through which the rules of society function, which can generally be viewed from the perspectives of economics and organizational sociology. Institutions can be categorized into formal and informal or regulatory, normative, and cognitive (Gain and Watanabe 2017). A formal institution consists of regulatory bodies that are responsible for creating and enforcing rules and regulations governing various aspects of society or organizations. These include government agencies, professional associations, and legal entities that establish the legal framework, such as employment and labor laws, as well as the policies and regulations under which organizations operate.

Informal institutions consist of normative and cognitive institutions. Normative institutions involve social norms, values, and beliefs that guide behavior and shape ethical standards and moral principles within organizations (Franzen et al 2015). These include moral responsibilities and cultural or traditional norms that influence practices, such as incentives and social expectations like fairness, honesty, and loyalty. Cognitive institutions encompass shared beliefs and ideologies that shape how individuals think and reason about their environment, such as belief systems regarding decision-making and organizational work methods. In the Nigerian construction industry, these institutions involve employment and labor laws that protect employees' rights, contract laws that safeguard the rights of organizations and clients, and government policies and regulations that establish and enforce principles and guidelines. The definition and enforcement of laws and regulations are important features of the institutional environment (Williamson 2000). In addition, Criminal law in Nigeria governs offenses, penalties, and procedures for handling criminal activities. According to Independent Corrupt Practices and Other related offences commission (ICPC) criminal law in Nigeria is based on a mix of statutory law, customary law, and Islamic (Sharia) law, depending on the region. The complexity of Nigeria's criminal law system reflects its diverse legal traditions and regions that prescribe criminal conduct, penalties, and the judicial process for dealing with crimes. While there are robust frameworks to handle various crimes, such as corruption, inefficiency, and human rights violations hinder effective justice delivery.

3.4.2.1. Employment and Work Law

The Nigeria Employment and Work Law plays an essential role in regulating employee–employer relationship in Nigeria, including in the construction industry. This law was formally enacted by the Nigeria National Assembly to protect the rights of employees (Idiaru and Jegede 2021). This law ensures the protection of workers' rights, including timely wage payments, fair working conditions, and access to benefits such as leave pay and medical schemes. Compliance with this employment law is mandatory for construction organizations in Nigeria. Employment and work laws safeguard employee rights and help avoid operational ambiguities (Nwiyi and Amanawa 2023). The law not only protects employee rights, improves working conditions, and contributes to economic and social development but also creates a significant fair, stable, and conducive environment for both employees and employers.

3.4.2.2. Contract Law

The law plays an important role in the Nigerian construction industry, protecting the interests of the parties involved in contracts. This was constitutionally instituted by the federal government of Nigeria through the National Council on Public Procurement (Alewo 2012). The law emphasizes equitable treatment by regulating unjust contract terms and is associated with regulations that include codes of conduct, anti-corruption measures, transparency requirements, fair competition standards, and equal treatment of bidders. It mandates ethical conduct in public procurement involving various entities, including procuring bodies, tenderers, suppliers, contractors, and consultants. The law strictly prohibits the giving, receiving, or soliciting of anything of value to influence officials, as well as fraudulent practices such as misrepresentation to manipulate the procurement process.

3.4.2.3. Government Policy and Regulation

Regulation is the imposition of laws or directives by a government or regulatory body through policies, such as guidelines and principles. Its purpose is to address issues or achieve specific goals, such as ensuring compliance with legal standards and protecting public interests (Guseva 2020). In the Nigerian Construction Industry, government regulations encompass policies set by the government to supervise and control various

aspects of industry activities. These policies are guidelines or rules formulated and adopted within the industry, such as safety policies, quality assurance policies, ethical policies, sustainability policies, and environmental policies. Their purpose is to guide decision-making, address challenges, and establish a framework for consistent and effective procedures.

These policies are issued and enforced by regulatory bodies, such as the Environmental Impact Assessment Agency (EIA), which evaluates the environmental impacts of projects and ensures compliance with environmental policies. The Quantity Survey Registration Board of Nigeria (QSREN) focuses on financial accountability and efficient resource allocation in projects. The Council of Registered Builders of Nigeria (CORBON) maintains quality standards in materials, accredits contractors, and enforces compliance with industry norms. The Institute of Safety Professionals of Nigeria (ISPON) oversees safety management practices and establishes safety standards for individuals and organizations in the sector. The Ministry of Lands, Housing, and Urban Development (MLHUD) is responsible for providing policy direction and enacting laws that ensure sustainable land management and national standards in all matters related to lands, housing, and urban development in Nigeria. Together, these regulatory bodies work to uphold standards, ensure accountability, and promote safety within the NCI.

3.4.3. Governance

A governance structure refers to the institutional framework within which the integrity of a transaction is determined. It encompasses the legal foundation, relevant investments, and the implementation of the outlined transactions. Williamson (1979) described it as a stand where the paradigm of a discrete transaction agreed upon is demonstrated with clear performance to mitigate conflict and realize a mutual gain. Governance structure helps in reshaping incentives, focuses on ex-ante incentive alignment, and promotes the adaptation of principal dimensions and related attributes of industry regulations. In Nigeria, governance is supposed to become the play of the game, in which contracts are demonstrated under laws and regulations.

Construction organizations are responsible for implementing and monitoring policies and ensuring that all decisions and actions comply with the laws and regulations governing contracts. A decline in adherence to ethical practices, such as a loss of values,

norms, morals, rules, and regulations, can lead to poor performance within these organizations. The influence of such embedded factors has weakened the effectiveness of laws and regulations in many construction organizations. Usman et al (2012) claimed that lack of functioning laws results in unethical practices in the NCI.

3.4.3.1. Ineffectiveness of Employment and Work Law

The ineffectiveness of employment and labor laws within an organization can lead to several consequences, including a lack of standardized employment practices, the potential for conflicting policies, and unfair treatment of employees. These issues are not unique to the Nigerian construction industry. Corruption has been found to cause organizations to violate employment and labor laws through practices such as bribery to ignore employee health and safety standards and the implementation of unfair salary structures (Ayodele and Alabi 2011). The lack of employment standards contributes to the identified unfair working conditions and job insecurity revealed in an interview. Moreover, few or no penalties given to organizations that violated the law were discovered to be the result of political connections and influences (Usman et al 2012). These factors contribute to inadequate motivation support existing in organizations. This is because there is no active agency established by the government to enforce the law after its institution.

The weak law was shown to have created discrimination based on religion and tribal affiliation, which caused biased employment decisions and unequal treatment of workers as confirmed in an interview. This allows employers to exploit project managers by providing inadequate working conditions and engaging in unfair treatment, thereby affecting the trust and commitment between employers and employees. The effective enforcement of employment laws can protect project managers against discrimination, harassment, unfair wages, excessive work hours, inadequate health and safety standards, lack of leave and benefits, and unjust termination or severance. To sustain rapid economic growth and infrastructure development, it is essential to establish robust enforcement mechanisms and ensure management commitment to improving compliance with employment and labor laws (Umeokeafor 2014).

3.4.3.2. Ineffectiveness of Contract Law

The ineffectiveness of contract law often results in parties breaching their legally binding agreements and contractual obligations. In Nigeria's construction industry, corrupt practices result in the ineffectiveness of this law, which affects transparency and fair competition opportunities among organizations during contract bidding. Organizations are being exploited through bribery to get contracts, and these corrupt practices and political connections result in contracts being awarded to unqualified contractors (Ogunde et al 2017). This situation causes uncertainty and financial implications for projects, such as delays and effects on project budgets and overall financial viability. The impact of these corrupt practices has a negative effect on project timelines and scope, and they compromise project quality. Usman et al. (2012) attributed these problems to absence of compliance to procurement processes due to corruption in the system and identified the absence of punishment as the cause of unethical practices. In addition, the ineffectiveness of the law has made it difficult for project managers to manage risks related to poor performance and breach of contracts from sub-contractors and suppliers.

3.4.3.3. Instability of Government Policy and Regulation

To achieve the desired outcomes, policies are created to address issues and challenges regularly. These policies and regulations include written rules, regulations, processes, and standards that reflect a country's economic, political, social, and cultural position (Khan 2014). In Nigeria, the process of obtaining project permits and approvals from government agencies, such as EIA, QSREN, CORBON, MLHUD, and ISPON, was found to be unreliable due to constant policy changes with each new administration. This instability was found to be a result of corrupt practices and political influences that undermine existing regulations and enforcement for personal gains, which have negative effects on construction projects (Titus and Ali 2023). This leads to uncertainties, including delays in project timelines, cost overruns, renegotiation due to regulatory shifts, and absence of safety measures, environmental violations, and contractual disputes. The inconsistency further creates a challenging environment for project managers to have long-term plans and undertaking decision-making on projects, and they struggle to navigate regulatory compliance. It was discovered in an interview that this uncertainty

hinders investor confidence, particularly in public-private partnerships (PPPs), where private organizations and banks collaborate with the Nigerian government on infrastructure development.

3.4.3.4. Lack of Motivational Support

Integrating neoclassical ideals can restore the governance framework, ensuring rationality, clarity, and enduring effectiveness. The provision of mechanisms of ex-ante incentive alignment and efficient risk-bearing factors could reduce the influence of negative factors on governance (Olategu et al 2011). The neoclassical approach revives classical principles by emphasizing rationality. Motivational support for project managers can enhance commitment and loyalty. However, this study found that low motivation factors, such as inadequate job training, rewards, and incentives, are prevalent. Therefore, revitalizing the governance structure requires a rational reassessment and re-establishment of order, along with creating a durable framework and providing clear guidelines. This process involves promoting collaboration, fostering trust, celebrating progress, aligning with core values, reinforcing ethics, advocating for sustainable renewal, and pursuing continuous improvement. By integrating these values, project managers can find purpose, order, and a sense of continuity in their roles, leading to more effective project management and improved project outcomes.

3.4.4. Resource Allocation

Resource allocation refers to the process by which an organization distributes available resources among competing users, which is also influenced by the institutional environment. According to Williamson (1979), it involves the distribution of resources based on the interplay of market forces and the institutional environment, considering the formal and informal rules that govern economic activities within an organization. Construction organizations are responsible for upholding workers' rights, including ensuring timely wage payments, fair working conditions, and adequate motivational support. This study found that insufficient motivational support contributes to the underutilization of project managers. Therefore, providing appropriate motivational support can enhance project managers' commitment and loyalty, leading to improved organizational performance. Establishing clear rules and guidelines for motivational

support will help both parties navigate complex situations, reduce distrust, and enable organizations to allocate support more effectively. According to Crossman and Abou-Zaki (2003), motivation influences workers' behaviors and determines their commitment, passion, and participation.

3.4.4.1. Employee Recognition

The appreciation of employees consistently and systematically has a significant effect on how they engage in tasks (Zailani et al 2010). Interview respondents highlighted the importance of appreciation through incentives, compliments, and rewards, noting that these factors significantly impact their contributions and personal satisfaction. They identified recognition, especially through job promotions, as a crucial factor in enhancing commitment, as it aligns higher expectations with new roles. Acknowledgments, such as appreciation and awards from organizations, were noted to boost morale and motivate employees, including project managers, to produce high-quality work. Organizations that implement recognition programs reported that such initiatives not only motivate employees but also create a sense of job security and enhance overall contributions. Recognizing and appreciating employees through verbal praise, awards, certificates, and promotions positively affects morale, job performance, and overall motivation (Johari and Jha 2020).

3.4.4.2. Organizational Support

Organizational support is essential for enhancing the competence and performance of workers, including project managers (Al-Abbadi and Agyekum-Mensah 2022). This support includes key elements, such as job training, involvement in decision-making processes, and the autonomy to make necessary decisions. Creating a work environment that promotes support is vital in construction organizations, where teamwork is integral. Such an environment encourages constructive feedback, facilitates job improvement, and establishes effective communication channels within the organization. The interview respondents emphasized that career development and job training significantly enhanced their contributions to their organizations and promoted their self-actualization. These practices of support are important for project managers in contributing to organizational goals. This aligns with Siti et al. (2017), who assert that learning opportunities promote

performance. Additionally, respondents emphasized the importance of top management support in their project management roles, highlighting the need for autonomy and involvement in decision-making. They underscored that supporting project managers in their careers and responsibilities is crucial for organizations seeking to enhance commitment and loyalty among their workforce.

3.4.4.3. Support for Safety and Material Provision

Support for safety and material provision, including good facilities, safety equipment, and available working materials, plays a crucial role in fostering commitment to construction projects. Interview respondents highlighted that such an environment promotes teamwork, collaboration, effective communication, and a healthy work-life balance. The availability of working materials and safety measures was considered significant by project managers in the Nigerian construction industry, with a high emphasis on safety measures and medical insurance due to the inherent risks of construction projects (Olutuase 2014). This supportive environment not only contributes to the well-being of employees but also enhances creativity, performance, and overall job success, creating a harmonious workplace.

3.5. Factors Affecting the Utilization of Project Managers

Table 3 outlines the factors negatively impacting construction organizations and project managers in the NCI, creating an institutional environment that hampers effective project management. These factors undermine the implementation and enforcement of laws and regulations, leading to unethical practices, bribery, substandard work, project delays, and cost overruns. The pervasive influence of corruption and political interference distorts transparency and ethical practices during contract bidding, resulting in contracts being awarded to unqualified contractors. Additionally, religious and tribal concerns, combined with an organizational culture lacking motivational support, further complicate the institutional environment. These negative effects diminish trust, commitment, and autonomy for project managers, contributing to their underutilization and affecting overall project success.

Table 3: Institutional Factors Affecting Construction Organizations and Project Managers

Institutional Level	Institutional Factors	Impact of the Factor on Construction Organization	Impact of the Factor on Project Managers
Embeddedness level	Corruption	Bribery during contract bidding, nepotism in awarding contracts, quality compromises, project delays and cost overrun	Pressure to undermine project success, undermine project management procedures, affect trust in PMR ability, and professional reputation damage
	Political influence	Encourage corruption, award contracts based on political affiliation, encourage unqualified contractors to get contracts	Affect PMR decision making, pressure to include a specific individual in a project team, influence promotion, limit autonomy, increase project risk, ineffective resource allocation, and limit career growth
	Religion & Tribe	Conflict and division among employees, project delay and cost overrun	Discrimination limits PMR chances to grow within the organization, lack of unity, breakdown of communication and collaboration among the project team, bias in job assignment
	Organizational culture	Discourages innovation and creativity, project delays, and cost overruns	Unfair working conditions, no career and skill growth, less commitment, unfair salaries, PMR demoralization
Institutional environment level	Employment & work law	Regulate employee-employer relations, provide organizations with fundamental rights of workers on minimum wage, overtime pay, safe working conditions, equal treatment, and opportunity employment	Provide a legally binding agreement with roles and compensation and termination procedures, protect PMR rights on minimum wage, harassment, overtime work, health and safety rights, work benefits, and protection from discrimination
	Contract law	Governs the legally binding agreements between organizations and clients, guides the contract bidding process, prevents corruption and nepotism during bidding, and prevents misuse and misapplication of the formation of stages involved	PMR relies on the contract to define the project scope clearly, help the project manager manage the project budget within the contract limit, allocate risk liability among parties, and provide a project-specific period.
	Government policy & regulation	Enforcing compliance with safety and laws, accrediting contractors, establishing standards, approving permits, assessing environmental and safety impacts	Compliance management, identifying and providing necessary permits and approvals, compliance with safety and laws, identifying quality standards, and risk management

Governance level	Ineffectiveness of employment & work Law	Lack of standardized employment practices, unfavorable working conditions, discrimination and harassment, sudden termination of employment, lack of career growth and training program	Lack of job security, unfair treatment, unfavorable working conditions, unfair wages, discrimination and harassment, demoralize, less commitment
	Ineffectiveness of contract law	Nepotism and exploitation during contract bidding and distortion lead to awarding contracts to unqualified contractors, payment disputes, and compromise of work quality	Endanger communication and collaboration with subcontractors and suppliers, difficulties in managing risk, struggle to understand and communicate the project requirements to the team
	Instability of policy and regulation	Frequent policy changes pose risks to project planning, delay permits and approvals, budget fluctuation, increase project time and cost, and contractual disputes, disrupting the supply of materials	Uncertainty in project planning, the burden of constant monitoring and adaptation, affect project budget, delay in the decision-making process, risk management difficulties, and difficulties in compliance with policy
	Lack of motivation	Lack of innovation and creativity of employees, low productivity of an organization, project delay and cost overrun, ineffective communication	Less commitment to problem-solving and less attention to project details leads to quality compromise, increased stress and frustration, and breakdown of communication and collaboration
Resource allocation level	Employee recognition	Increases organizational performance, fosters smooth communication with employees and encourages retention of valuable employees	Enhance commitment, encourage continued delivery of high-quality work, create a sense of job security, enhance job satisfaction, and foster effective collaboration with team and management
	Organizational support	Increases organizational performance, provides a positive reputation for the organization and effective communication channels	Increases commitment and loyalty, promotes performance, and provides training and career growth, involvement in decision-making processes, autonomy at work, teamwork, and collaboration
	Support of safety and material provision	Enhances organizational performance through teamwork and collaboration, higher quality work, encourages a positive organizational reputation, establishes a mechanism for conflict resolution, encourages investment in employees, and fosters client satisfaction	Material available enhances performance, provision of safety measures, and medical insurance, equal treatment, enhances creativity and performance, supports teamwork and collaboration, innovation, and problem-solving, promotes communication, fosters trust and work–life balance

3.6. Summary

The weak governance structure of Nigerian construction organizations has encouraged compromises in the legal structure and principles of construction practices. Without a proper legal framework in place, individuals may face unfair treatment, which leads to distrust and dissatisfaction. Inadequate employment and work law create uncertainty regarding job security for project managers, leading to anxiety and undermining their commitment and loyalty. The lack of clear and enforceable contract laws results in disputes and ambiguous responsibilities, which can cause project delays. Frequent changes in construction policies and regulations disrupt project planning, leaving project managers to navigate evolving challenges that affect their ability to successfully deliver projects. This results in the absence of standardized project management processes and methodologies.

These combined effects create a challenging working environment for project managers in the Nigerian construction industry. Weak governance and embedded factors have strained the relationship between project managers and employers, eroding trust and support. Mutual distrust, stemming from the risk perception of project managers and inadequate motivational support, exacerbates the problem. The pervasive negative impact of these factors, due to weak governance and a lack of trust, contributes to the underutilization of project managers in construction organizations in the NCI. This issue of mutual distrust between project managers and employers will be analyzed in more detail in the next chapter.

3.7. Discussion, Findings, and Directions

3.7.1. Existence of Mutual Distrust

Trust has significant effects on enhancing the credibility, psychological safety, and loyalty of employees. Trust in project managers' abilities and commitment is essential for successful outcomes through their technical expertise, problem-solving skills, transparent communication, strong relationships with stakeholders, and informed decision-making (Bond-barnard and Steyn 2015). This study found that trust in the abilities and commitment of project managers in Nigerian construction organizations is significantly

low due to their limited project management experience.

3.7.2. Hypothetical Risk Structural Diagram

In this section, the mutual distrust between project managers and employers is analyzed in detail. To do so, this study hypothetically identifies the interrelationship of risk perception between project managers and employers using the definition of risk in ISO31000. ISO31000 is an international standard for risk management that provides principles, a framework, and a process for managing risk effectively within various types and sizes of organizations, including sectors and industries (Ivanova 2021). ISO 31000 highlights the importance of integrating risk management into an organization's overall governance and decision-making processes by providing a systematic approach to identifying, assessing, treating, monitoring, and communicating risks. The goal is to help organizations make informed decisions, enhance resilience, and achieve their objectives despite uncertainty. Risk is defined as the "effect of uncertainty on objectives" (Wang and Watanabe 2020), while uncertainty is described as the state, even partial, of deficiency of information related to understanding or knowledge of an event, its consequence, or likelihood.

Figure 2 illustrates the hypothetical relationship between employer organizations and project managers, depicting the flow of the "objective-uncertainty-risk measure" for each party and their interrelationship. This flow is represented in opposite directions: top-down for the organization and bottom-up for the project manager. Each party has distinct objectives, interests, or priorities, which lead to uncertainty and risk as they strive to achieve their goals. Measures taken by one party can influence the other, with each party's actions impacting the other's risk and uncertainty management.

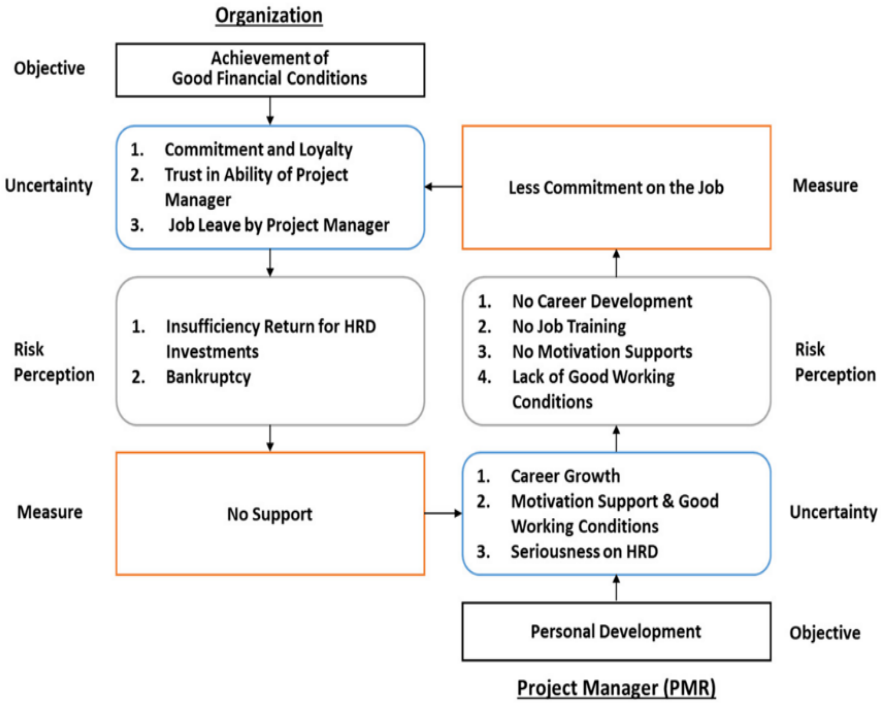

Figure 3: The Vicious Cycle of Uncertainty and Risk between Employer and Project Manager

Organizations focus on the achievement of good financial conditions. They are uncertain about their financial situations because the pervasive political influences and embedded corrupt practices, particularly bribery, within the industry contribute significantly to the financial challenges faced by organizations. Obebe et al. (2020) claimed that corruption and bribery as a result of political interference have a negative impact on the success of Nigerian construction projects. Organizations often face uncertainty regarding project managers' abilities, commitment, and loyalty. Concerns about the high costs of human resource development (HRD) initiatives are prevalent, compounded by the fear that trained project managers might leave for better opportunities elsewhere (Ameh and Daniel 2017). As a result, organizations may adopt a "no support" stance toward project managers' career growth objectives.

Project managers seek career development and equitable incentives to fulfill their professional needs. However, the "no support" approach by organizations restricts their opportunities for career advancement, skill development, and other motivational support, leading to a sense of undervaluation. Aung et al. (2023) noted that higher demotivation among managers in construction organizations results in decreased satisfaction and productivity. The lack of effective employment and work laws further exacerbates job

insecurity and poor working conditions, including unfair salaries, discrimination, inadequate health and safety protection, and insufficient incentives. This environment leads to reduced commitment from project managers, limited contributions, and overall poor performance.

The study observed that project managers are more likely to be committed and loyal if they perceive opportunities for career growth and recognition through rewards and incentives. The absence of such opportunities, along with insufficient motivational support and job training, drives project managers to adopt a defensive stance characterized by "less commitment" to their roles and responsibilities. Zailani et al. (2010) highlighted the importance of distinct motivational factors on employee performance in construction organizations.

This defensive stance contributes to a vicious cycle of uncertainty between project managers and their organizations. The flow of "Objective-Uncertainty-Risk Perception-Measure" for both parties in opposite directions creates mutual distrust. To mitigate this, it is essential to break the cycle of uncertainty and foster a more supportive and trusting relationship.

3.8. Structure of the Underutilization of Project Managers

This study found that organizations often perceive uncertainty regarding their project managers' abilities. To address this issue, it is crucial to identify the root causes of this perceived uncertainty. This section explores the structure underlying the underutilization of project managers. Figure 3 illustrates this structure, which comprises two subsystems:

Subsystem for Creating the Underperformance of Project Managers: This subsystem identifies factors that contribute to project managers' underperformance. These factors include inadequate resources, lack of support, insufficient training, and the negative impact of external influences such as corruption and unstable policies.

Subsystem for Lowering the Commitment of Project Managers: This subsystem focuses on elements that lead to reduced commitment among project managers. Key components include poor working conditions, inadequate career development opportunities, lack of recognition and rewards, and overall low motivational support.

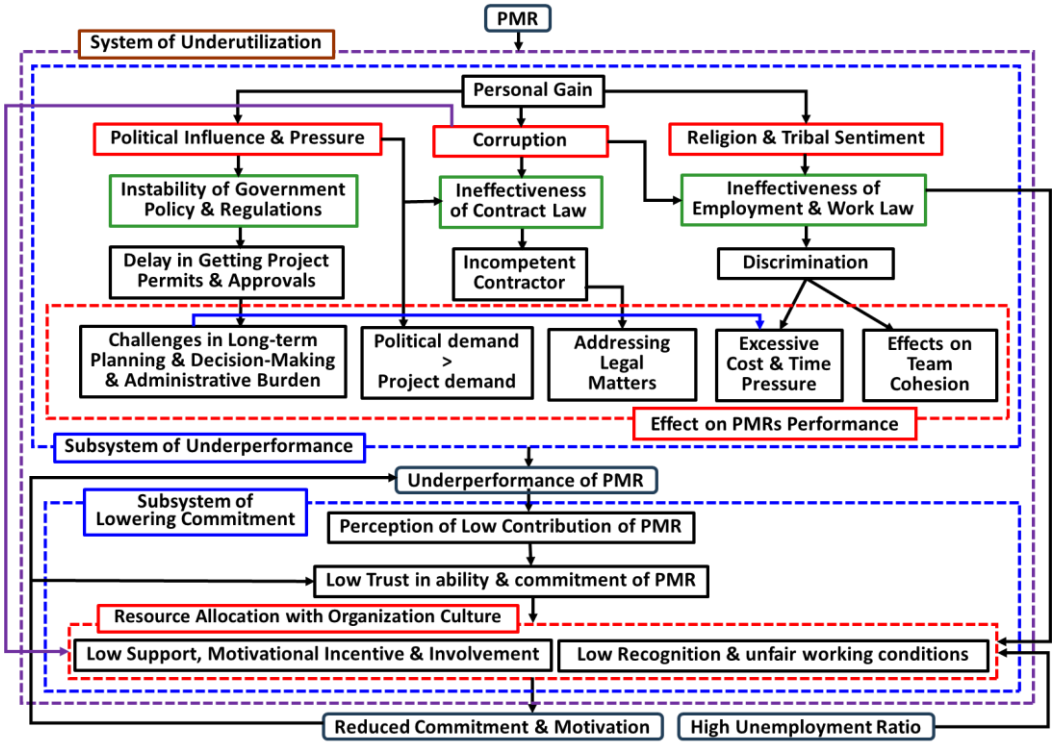

Figure 4: Structure of Underperformance of Project Manager

The findings reveal that the ineffectiveness of contract law, instability in government policies and regulations, and deficiencies in employment and work law are consequences of adverse and pervasive embedded factors driven by personal gain. These embedded factors, including corruption, political influence, and pressure, collectively contribute to the inefficiencies observed within the institutional environment framework. This is consistent with Usman et al. (2012), who argue that corruption and political interference undermine the ethics of the construction sector in Nigeria. The findings further indicate that the negative effects of political influence and pressure contribute to policy and regulatory instability, impacting contract law. As a result, project managers are often forced to prioritize the demands of political elites over project requirements. Additionally, the instability of government policies and regulations leads to delays in obtaining project permits, impeding long-term project plans, creating administrative burdens, and affecting the decision-making of project managers (Ogunde et al. 2017).

This situation imposes excessive effects on project costs and timelines. Corruption undermines the integrity of institutional rules, particularly impacting the effectiveness of contract law. Practices such as bribery distort contract bidding processes, leading to

contracts being awarded to unqualified contractors, which often results in legal disputes. Additionally, corruption, along with religious and tribal sentiments, significantly contributes to the ineffectiveness of employment and work law.

The weaknesses in this law lead to unfair working conditions, including job insecurity, inadequate salaries, lack of promotions, and insufficient safety and medical provisions. This lack of effective employment law also fosters religious and tribal discrimination in the workplace, which undermines project team cohesion. Consequently, the ineffectiveness of contract law, instability in government policies, and deficiencies in employment law collectively force project managers to underperform, acting as external constraints that reduce their contributions during projects.

his environment results in low trust in the capabilities of project managers, perpetuating an organizational culture that offers minimal support and motivational incentives, low recognition, unfair working conditions, and limited involvement in decision-making. Bond-Barnard and Steyn (2015) argue that a lack of trust in the project management team impairs knowledge sharing among team members and stakeholders. Corruption exacerbates this issue by diverting funds from employee benefits, leading to minimal rewards and limited career growth opportunities.

The ineffectiveness of employment and work law also fosters corruption, with the high unemployment rate in Nigeria further influencing these dynamics. These factors contribute to decreased commitment from project managers, worsening their underperformance and diminishing trust in their commitment and loyalty to their organizations. This subsystem not only reduces project managers' commitment but also serves as a secondary mechanism for their underperformance.

Therefore, to solve the problem of the underutilization of project managers, it is necessary to change the subsystem of underperformance and lower commitment to one of high performance and higher commitment. In the next section, the direction for new systems is discussed.

3.9. Direction to Subsystems of Higher Performance

Based on the results and findings, this study identified good examples relevant to enhancing project managers' commitments toward higher performance.

3.9.1. Direction of the Subsystem of Higher Commitment: Empirical Findings

This study establishes empirical findings on organizations controlling the vicious cycle of uncertainty and risk between employers and project managers in construction organizations in Nigeria. During interviews, this study revealed that some organizations have successfully implemented mechanisms that align project managers' personal goals with organizational objectives through motivational strategies, thereby boosting overall performance.

These organizations have developed structured programs to recognize and appreciate the efforts of employees, including project managers. These programs establish a system that acknowledges outstanding performance in various facets of project management and fosters a culture of verbal recognition in team meetings, along with written commendations from the board of directors, highlighting specific achievements and contributions. Performance-based approaches are employed with transparency, linking bonuses, incentives, and rewards directly to employees' achievements in meeting project goals.

The organizations also support professional development through workshops and seminars that enhance project managers' skills and knowledge, helping them acquire new certifications to further their professional growth within the organization. Clear career pathways and mentorship programs are key approaches used to provide detailed career development plans. These initiatives help organizations outline promotion criteria and assign mentors who guide employees in aligning their career aspirations with their job requirements.

Furthermore, these organizations foster an inclusive organizational culture that emphasizes diversity and inclusion, making all employees, including project managers, feel valued and respected. Ameh and Daniel (2017) noted that such a culture improves employee-employer relationships and boosts organizational performance by creating a sense of belonging through initiatives like team-building activities and wellness programs,

such as health insurance.

Supportive leadership was highlighted as a crucial approach by these organizations. This involves leaders showing empathy by understanding their team members' challenges and feelings, and flexibility by accommodating diverse opinions. Regular one-on-one meetings and accessible leadership contribute to an open working environment and foster a culture of trust and mutual respect. Some organizations have also introduced schemes to offer company shares at reduced prices to dedicated managers who have been with the company for at least 10 years. This initiative effectively turns these project managers into shareholders, continuously reminding them to enhance their commitment and performance to improve their stakes in the company. Henkel and Haley (2020) emphasized the importance of motivating project managers, given their vital role in achieving project success. This approach not only fosters a sense of ownership, belonging, and loyalty among project managers but also aligns their personal interests with the organization's success.

The analysis showed that recognizing project managers' efforts and achievements boosts their morale, motivation, and relationships. When project managers feel their contributions are valued and acknowledged, they are more motivated and engaged. Johari and Jha (2020) found that increased motivation among workers enhances their performance and retention within the organization. The findings suggest that working closely with project managers to understand their career goals, conducting regular performance reviews, and recognizing achievements through appreciation, training rewards, and career development support enhances their commitment and loyalty. Strategies such as promotions, long-term incentives, and improved retention efforts ensure that project managers remain dedicated to the organization and contribute to improved project performance. These approaches also help retain talented project managers and enable them to benefit from the organization's supportive programs. The findings align with Tam and Watanabe (2020), who observed that motivational support fosters positive relationships and satisfaction, leading to greater productivity. Kazaz et al. (2008) also noted that training and motivation are crucial for increasing performance in construction organizations. The study supports the expectancy theory, which suggests that an individual's motivation to exert effort is influenced by their expectations.

3.10. Directions for Changing the Underperformance Structure

In this section, directions for changing the underperformance structure are discussed. Achieving this objective necessitates a collaborative approach involving regulatory bodies, experts from the Nigerian Construction Industry (NCI), and relevant government stakeholders. This collaboration aims to thoroughly understand the challenges faced by all parties and develop effective solutions together. Key actions include identifying outdated or ambiguous provisions and updating them to reflect current industry standards and best practices. Additionally, there is a need to implement clear, efficient, and standardized procedures to reduce bureaucratic hurdles and expedite permit issuance.

Embracing digitalization is crucial for minimizing paperwork, enhancing transparency, and raising awareness within the industry about revised regulations and the importance of compliance. In addition, the government should establish a monitoring and enforcement system together with penalties for any violation to ensure compliance, and institute periodic reviews of the regulatory framework to identify emerging issues and adapt regulations accordingly. Furthermore, it is imperative to mitigate the risk of personal gain that leads to corruption, political influence, and pressures in the industry through a range of measures to promote transparency, ethical behavior, and accountability. Kasimu and Isah (2012) argued that establishing an enforcement mechanism in the industry would help in upholding ethical practices.

Therefore, to address the current issues, the government, in partnership with the Nigerian Construction Industry, needs to develop and enforce a comprehensive code of conduct that specifically addresses personal gain issues. This code should be well-publicized and adhered to by all contractors and stakeholders. Implementing anti-corruption policies that clearly define the organization's stance against corruption and provide guidelines for reporting suspicious behavior is crucial in mitigating the negative effects of personal gain. Additionally, establishing a whistleblower protection program with defined channels for reporting and investigating allegations will encourage contractors and stakeholders to report unethical behavior without fear of retaliation.

This multidimensional strategy will foster a more effective and responsive regulatory environment, shifting the focus from corruption and political interests toward prioritizing project objectives within the construction industry. Consequently, this study

recommends that the government establish an enforcement body dedicated to ensuring the effective implementation of employment and work laws within the NCI. This body would ensure that construction organizations comply with the law, thereby protecting employee rights and well-being.

To enhance contract law, governmental reforms should include an enforcement system with penalties for violations to reduce corruption, which often leads to contracts being awarded to unqualified contractors.

To tackle excessive delays in obtaining permits, this study advocates for the development of reform policies and regulatory frameworks through collaboration among regulatory bodies, NCI experts, and government stakeholders. Nweze (2016) highlighted the need for such collaboration to establish systems aimed at reducing permit delays. This approach will help identify the challenges that impede the issuance process, jointly update and clarify permit issuance procedures to improve transparency, and implement a monitoring and enforcement system with penalties for violations.

3.11 Conclusions

This study offers a comprehensive analysis of the underutilization of project managers within the Nigerian Construction Industry (NCI). It examines how embeddedness, institutional environment, governance, and resource allocation interact to contribute to this issue.

The study identifies a vicious cycle that represents one of the most critical motivational problems in the NCI. Project managers experience uncertainty and anxiety regarding their career growth, the adequacy of motivational support, and the organization's commitment to their development. Conversely, organizations also face uncertainty about the trustworthiness, capability, and potential departure of their project managers. This mutual uncertainty fosters a cycle of distrust that severely impacts the utilization of project managers and is arguably a significant loss of national wealth in Nigeria.

This study gives a reason for the underutilization of project managers and a direction for its solutions in the NCI. It is found that embeddedness, institutional environment, governance, and resource allocation form a system of underutilization. The system

consists of a subsystem for underperformance and a subsystem for lowering the commitment of project managers. The reduced commitment and motivation of project managers are outputs of these systems.

The project managers are "forced" into a tough environment, much of which is uncontrollable by them, including aspects such as politicians' pursuit of personal gains, corruption, religious and tribal sentiment, and weak governance of law and regulations. These "external" factors always put unnecessary demands and pressures on project managers. It prevents project managers from using their full potential in their work. Their observed performance is considered to be lower than their true performance. Unfortunately, their organization perceives this observed performance as their true performance. This doubt becomes a "seed" of low trust in the ability and commitment of project managers. Insufficient support for employees is culturally embedded in many Nigerian construction organizations. Low trust towards project managers even causes cuts in support for project managers. This lowers their commitment and trustworthiness, which may adversely affect their performance even when the next opportunity is given.

The academic novelty is as follows. First, this study identifies that the underutilization problems be broken down into two main problems: underperformance and reduced commitment. As a first step towards solving the problem, it is essential to clarify the structure of the problem. Second, this study shed the light on controllability of system components. As a next step towards problem-solving, it is necessary to identify who should be responsible for developing and implementing each part of the solution. Third, this study demonstrates the applicability of the four-level framework of institutional analysis from the new institutional economics defined by Williamson (2000) to a new problem. The first and the second academic novelties were generated because the right theoretical framework, the four-level framework of institutional analysis, was used.

This study is expected to contribute to solving this underutilization problem. This problem seems to have been neglected, except for "blaming" project managers for "low" ability and commitment. However, the problem has been incorrectly perceived and identified. The study provides insight into the actual problem and who should be responsible for solving the problem. The authors anticipate that this study will stimulate and facilitate problem-solving efforts in this regard.

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CHAPTER 4. VALUATION OF PROJECT MANAGERS TO ENHANCE PROJECT PERFORMANCE IN NIGERIA'S CONSTRUCTION INDUSTRY

4.1. Introduction

Completing study one, this research was able to identify the main factors that affect the institutional environment of the Nigerian construction industry (NCI) and how their influence causes the underutilization of project managers. The underutilization was broken down into underperformance and reduced commitment. Within the subsystem of underperformance, the study identifies certain embedded informal factors such as corruption, political influence, religious and tribal sentiments, and organizational culture as contributory causes of insufficient project management practices and project managers' effectiveness. These factors negatively influence institutional laws and regulations, including employment and work laws, contract law, and government policies and regulations, thereby undermining the ethics of the NCI.

The impacts of the underperformance results in the low contributions of project managers in the Nigerian construction industry. Part of the solutions proposed in study one was the collaboration of the government and NCI to develop and enforce a comprehensive code of conduct that explicitly addresses issues associated with personal gain that all contractors and stakeholders are aware of and adhere to this code. Implementing anti-corruption policies that outline an organization’s stance against corruption and provide guidelines for reporting any suspicious behavior is one of the effective measures that could help in reducing the negative effect of personal gain.

On the subsystem of lowering the commitment of project managers, the perception of low contributions leads to low trust in the ability and commitment of project managers. The lack of trust in project managers' commitment is one of the reasons for the organizational culture that fosters low support and motivational incentives, limited project manager involvement, insufficient recognition, and unfair working conditions. In this study, the reduced commitment of project managers is concentrated because insufficient of project management practices was identified as a contributory factor of project delays and cost overruns that leads to project failures in Nigerian construction industry.

Ibrahim and Daniel (2019) identified project manager incompetence and construction stage mistakes as factors contributing to low performance leading to project failures in Nigerian construction organizations. Ezeokoli et al (2021) revealed that the underutilization of project managers causes significant challenges including poor project planning, and inadequate quality control, which results in continuous project failure. Unegbu et al. (2023) attributed project delays in the country to improper planning and poor site management, which stem from a lack of project management experience and commitment among project managers. The inadequate contribution of project managers has been identified as the cause of the low performance of project managers in Nigerian construction organizations. These identified factors have been shown to contribute to the underutilization of project managers, resulting in decreased motivation, commitment, and contributions among project managers. Projects lacking competent project management practices are more at risk of failure.

However, no comprehensive research has been conducted on the actual contributions of project managers compared to the organization's expectations in Nigerian construction organizations. Previous literature has not fully investigated project managers' involvement, the organization's expectations, and the motivational factors that enhance their contributions and performance of project managers. To solve this low commitment of project managers, this study investigated the project management practices in the industry, project managers' contributions, and the organization's expectations of project managers. This research aims to quantitatively and qualitatively explore the causes of the lack of project managers' contributions in the industry and propose potential solutions. This provides deep insights into identifying the root causes of the lack of contributions of project managers during projects and how this leads to project delays and cost overruns, aiming to provide strategies for improving the effectiveness of construction project management in NCI.

4.2 Methodology

4.2.1. Participants and Procedures

This research was conducted by reviewing project managers' roles and responsibilities; and factors that influence the work motivation of project managers in construction organizations; designing questionnaires; and conducting a pilot survey; questionnaire survey and semi-structured interview. The pilot study is essential because the researcher may overlook many aspects of the research, which could affect the research outcome (Awang, 2014). Mixed-method has been a popular approach to research when depth knowledge is required and it developed in several disciplines and fields of study, including social and human sciences fields (Creswell, 2009). SPSS software was used to analyze collected data. A reliability test was conducted on the questionnaire to measure the internal consistency reliability by using Cronbach's Alpha coefficient. A test is reliable if the same result is obtained, meaning that the same answer should be obtain with the same method supposing the situation remains the same (Jankowicz 2005).

Computer software packages were used to analyze the data of this research as it reduced the time and energy of the researcher in the analysis process as compared to doing the analysis manually (Abatan and Olayemi 2014; Poursoltani 2022). Descriptive statistics of quantitative technique were conducted on the collected data to determine the project management practices in construction organizations in Nigeria, the ideal contribution of project managers (PMRs) by organizations, and the actual contributions of PMRs. Descriptive statistics is used for two purposes, to examine the data and to summarize the observations (Naoum 1998). The method was also used to determine the motivation factors attributed to PMRs within Nigerian construction organizations. In addition, a paired t-test was employed to determine whether the statistical evidence that, the mean difference between the actual contributions of PMRs in project management practices and the organization's expectations from project managers is significantly different from zero (Manfei et al 2017). Correlation analysis was conducted between the motivation factors and the degree of performance of project managers to determine whether the motivational support level provide by the organizations are as a results of project managers' performance. In addition, a combination of game theory model and regression analysis were conducted on the relationship between the motivational support and the degree of performance of project managers. This method was used to identify and

analyze the rationale behind the decisions made by organizations and project managers on their relationship.

The respondents selected for this survey were project managers employed in government construction agencies and private contracting firms, which have the highest concentration of project managers within the industry. The private contracting firms consist of both indigenous and foreign contractor organizations. Additionally, project managers from private consulting firms, including land and quantity survey consulting firms, geo-tech consulting firms, architectural firms, and mechanical and electrical consulting firms, were included in the survey. Table 4 shows the demographic characteristics of the questionnaire respondents. The survey included project managers holding various positions such as project directors, senior project managers, and project managers, with a minimum of a year and above twenty years of working experience.

Table 4: Demographic characteristics of the questionnaire respondents

	Category	Frequency	Percentage
Job Title/Position	Principals/Directors	9	4.4%
	Senior Project Managers	63	30.6%
	Project Managers	134	65.0%
Total		**206**	**100%**
Working Experience in PM	1 to 5 years	38	18.4%
	6 to 10 years	63	30.6%
	11 to 15 years	64	31.1%
	16 to 20 years	28	13.6%
	More than 20 years	13	6.3%
Total		**206**	**100%**
Type of Organization	Government sector	25	12.1%
	Private contracting firm	120	58.3%
	Private consulting firm	61	29.6%
Total		**206**	**100%**
Duration of Employment in a Current Organization in Project Management	1 to 5 years	40	19.4%
	6 to 10 years	64	31.1%
	11 to 15 years	63	30.6%
	16 to 20 years	29	14.1%
	More than 20 years	10	4.9%
Total		**206**	**100%**
Project managers (PMRs) working status	Number of PMRs that have worked in one organization only.	198	96.1%
	Number of PMRs that have worked in more than one organization	8	3.9%
Total		**206**	**100%**

4.2.2. Questionnaire and Interview

Table 5 outlines the three primary sectors of the Nigerian Construction Industry (NCI) selected for the questionnaire survey. A total of 400 questionnaires were distributed to respondents within these sectors using various channels, including email, online platforms, personal contacts, and physical distribution of hard copies.

Table 5: Data collection Organization

SECTOR	TYPES OF ORGANIZATIONS	SPECIALIZATION
Government sector	Government construction agencies (FERMA, FHA, FAAN, NRC, PMDAN, NDDC)	Constructing and management of government infrastructures.
Private sector	Private contracting firms (Indigenous and foreign construction and building companies).	Commercial construction; industrial construction; infrastructures; power and utility construction; institutional construction; and residential construction.
Private sector	Private consulting firms (engineering consulting companies)	Land survey companies, quantity survey consulting companies; Geo-tech consulting companies, Architectural and structural companies, and mechanical and electrical consulting companies.

Out of the 400 questionnaires distributed across various sectors, 206 were correctly filled and returned for analysis. Moser and Kalton (1971) stated that survey results could be considered biased and of little value if the percentage response is less than 30-40%. In this study, the response rate is 51.5%, which shows that the survey result is unbiased and higher value. Additionally, 36 participants were interviewed based on the questionnaire survey questions, to elicit more contextual insights from these professionals. The interview questions were predetermined, but the order and the wordings can be modified, and where the questions can be omitted or added during the interview (Robson, 2002).

Table 6 provides an overview of the respondents and the data collection based on their positions within the three groups. Seven interviewees represented government agencies such as FERMA, FHA, NRC, and FAAN. Eighteen interviewees were from registered private contracting firms specializing in major construction projects in Nigeria, while the remaining eleven were from registered private consulting firms. The data collected from the interviewees provided a quantitative description of the opinions of 206 respondents and gave insight into opinions regarding project managers' level of commitment and motivations that exist between organizations and project managers and the effect on project performance. Among the interview respondents, some represent the perspectives of the organizations, while others represent the viewpoints of project managers.

Table 6: Interviewees Project Manager (PMR) Position and Organization

Position	Government Sector	Private Contracting Firms	Private Consulting Firms	Total
Principal/Director		PMR20, PMR15, PMR5	PMR8	4
Senior Project Managers	PMR4, PMR11	PMR9, PMR12, PMR1, PMR27, PMR35	PMR31, PMR24, PMR33	10
Project Managers	PMR22, PMR16, PMR2, PMR28, PMR13	PMR3, PMR21, PMR17, PMR14, PMR23, PMR7, PMR29, PMR26, PMR32, PMR30	PMR36, PMR6, PMR25, PMR19, PMR34, PMR10, PMR18	22
Total	7	18	11	36

The interviews were conducted in regions categorized with high rates of government and private investment projects, driven by significant social and economic activity. These regions include the Southwest, known for the largest seaport and airport in Nigeria, positioning it as the country's economic center. The Southeast is recognized as the business, crude oil, and technological hub of Nigeria, attracting considerable investment and development projects. In addition, the South-south region, being the largest producer of crude oil and natural gas, serves as a focal point for energy-related projects and infrastructure development. On the other hand, Abuja, the federal capital territory of Nigeria, is located in the North-central region of the country, experiencing significant

government-led development projects and infrastructure initiatives. Focusing on these regions, the interviews aimed to capture insights from areas with high construction activity and investment concentrations. This provided a comprehensive understanding of the actual contribution of project managers in project management practices and the motivational support offered by the organizations in Nigeria.

4.2.3. Survey Design and Collection

The questionnaire was divided into two parts: the first part focused on the project management practices and their perceived importance. This encompassed an evaluation of the level of project management tasks practiced by the organizations, the extent of involvement of project managers in these tasks, and the degree of assignment of project management responsibilities to project managers and the related challenges. The second part focused on motivational factors and their perceived importance. This involved assessing the level of motivation factors practiced by the organizations, the extent to which these factors were applied to project managers, and any associated challenges, as shown in Table 7.

Table 7: A List of Questionnaire Survey Questions

	Part 1 Respondents Demography
Q1	The gender of the respondent
Q2	The respondent current job position
Q3	The duration the respondent has been working as a project management professional
Q4	Type of construction organization the respondent is currently working
Q5	The duration the respondent has been with the current organization and work as a project management professional
	Part 2 Project management practice in the Organizations
Q6	Perceived level of practices of project management functions conducted by non-project managers
Q7	Perceived level of importance of activities answered in Q6
Q8	Perceived level of practices of project management functions conducted by project managers
Q9	Perceived level of importance of activities answered in Q8
Q10	Perceived level of practices of project management functions assigned to project managers by the organization
Q11	Perceived level of importance of activities answered in Q12
	Part 3 Motivational Support practice in the Organizations
Q12	Perceived level of practice of motivation factors for organization employees

Q13	Perceived level of motivational support provided to project managers by organizations

Q10 & Q11 are questions about an organization's expectations towards project managers, that is, ideal situations. Q8 & Q9 are questions about actual situations. Thus, the difference between Q10 & Q11 and Q8 & Q9 is considered an index to represent whether project managers underperform or outperform the expectations of their organizations. Some tasks are assigned and conducted by non-project managers. Q6 & Q7 are questions about actual practices by non-project managers. Q6 & Q7 are designed to provide information on organization structure and culture such as how tasks for project management functions are assigned and how highly project managers are valued in each organization.

A pilot survey was conducted with project management professionals and practitioners with a purposive sampling approach including 3 academic experts and 13 project managers with over 10 years of project management experience to have an extensive knowledge of professionals. The participants of the pilot study were asked to evaluate and provide constructive comments on the appropriateness of the language, the validity of the questions, its structure, and completeness. The participants of the pilot study provided imperative data such as key performance indicators of project managers and standard operational procedures of the selected organizations. After receiving their comments, we revised the questionnaire on its readability, restructured and included their provisions. Based on recommendations from the pilot study, we established a criterion of 10 years of project management experience to select interview participants.

This threshold was set to ensure the collection of comprehensive data, considering the extensive knowledge and practical insights these participants possess in project management techniques. These participants hold key positions within their respective organizations, making their perspectives invaluable for capturing the unique characteristics of each organization. This approach facilitated a thorough exploration of the current trajectory of project management within their organizations and identified potential areas for improvement.

This questionnaire was structured using a 5-level Likert scale, providing respondents with a standardized method to express their opinions and perceptions and allowing for a detailed assessment of their perceived responses. According to Brown (2011), attitudinal

measures in the form of Likert scare are capable of generating more valid data than single measures. The respondents' responses were designed as 1 = not practice; 2 = low practice; 3 = medium practice; 4 = high practice and 5 = very high practice on the level of project management practices and motivational factors practices. The same pattern was used on the level of importance of the project management practices and motivational factors where 1 = not important; 2 = less important; 3 = medium important; 4 = high important and 5 = very high important. it was also used to identify the level of challenges in giving motivation to project managers where 1 = no challenge; 2 = low challenge; 3 = medium challenge; 4 = high challenge and 5 = very high challenge. This investigation aimed to ascertain the actual contribution of project managers, evaluate their commitment to project management practices, and understand the level of motivational support provided by their respective construction organizations.

4.2.4 Hypotheses

Iroha et al. 2024 claim that there is an existence of underperformance of project managers in the Nigerian construction industry and it leads to lower motivation practices by their organizations. The main purpose of this paper is to validate these claims. First, we develop the following hypothesis:

Hypothesis 1

$H1_0$ (Null Hypothesis): Project managers do not perceive underperformance or outperformance for any project management tasks.

$H1_1$ (Alternative Hypothesis): Project managers perceive underperformance or outperformance for some project management tasks.

Hypothesis 2

$H2_0$ (Null Hypothesis): Regardless of the level of underperformance or outperformance project managers perceive, they perceive the same level of motivational support from their organization.

$H2_1$ (Alternative): The higher the level of underperformance project managers perceive, then the less motivational support from their organization they perceive. The higher the level of outperformance project managers perceive, then the more motivational support from their organization they perceive.

$H3_0$ (Null Hypothesis): There is no perceived difference in the contribution by

non-project managers and project managers in that task.

$H3_1$ (Alternative Hypothesis): There is a perceived difference in the contribution by non-project managers and project managers in that task.

As described in 3.1.2, the difference between Q10 & Q11 and Q8 & Q9 explains the underperformance or outperformance. Q10 and Q8 represent the level of practice, and Q11 & Q9 represent their levels of importance. Here, we introduce new variables of EPMR and APMR as follows

$$EPMR = \frac{Q12+Q13}{2} \quad (1)$$

$$APMR = \frac{Q8+Q9}{2} \quad (2)$$

EPMR and APMR represent the expected and actual contribution of project managers respectively. Similarly, ANPMR represents the actual contribution of non-project managers.

$$ANPMR = \frac{Q6+Q7}{2} \quad (3)$$

The actual level of motivation support towards project managers denoted as AMS, is given as

$$AMS = Q15 \quad (4)$$

Using these variables, the above hypotheses 1 are rewritten as follows.

Where:

$H1_0$: $m_{EPMR} = m_{APMR}$ or $m_{DIFF} = 0$

$H1_1$: $m_{EPMR} \neq m_{APMR}$ or $m_{DIFF} \neq 0$

Here, m_{EPMR} and m_{APMR} represent the mean values of $EPMR$ and $APMR$ for each tasks respectively. Furthermore,

$$DIFF = EPMR - APMR \quad (5)$$

and m_{DIFF1} means the mean value of $DIFF1$ for each task.

To test the second hypothesis, we introduce variables of n_{EPMR}, n_{APMR}, n_{AMS}, and n_{DIFF1}. n_{EPMR}, n_{APMR}, and n_{AMS} mean the mean values of $EPMR$, $APMR$, and AMS for each respondent, respectively. n_{DIFF1} means the difference between n_{EPMR} and

n_{APMR}, which is the mean value of $DIFF1$ for each respondent. Then, the second hypothesis is rewritten as follows:

$H2_0$: n_{DIFF1} and n_{AMS} are independent.

$H2_1$: n_{DIFF1} and n_{AMS} are negatively correlated

Using these variables, the above hypotheses are rewritten as follows:

$H3_0$: $m_{ANPMR} = m_{APMR}$ or $m_{DIFF2} = 0$

$H3_1$: $m_{ANPMR} \neq m_{APMR}$ or $m_{DIFF2} \neq 0$

$$DIFF2 = ANPMR - APMR \quad (6)$$

The expected contribution of project managers by the organizations and their actual contribution may vary depending on the type of business scope such as government, consultancy or contracting. It is reasonable to assume that these differences are independent of the business type. This assumption suggests that variations in the expected and actual contributions of project managers are likely influenced by broader organizational practices and cultural factors, rather than the specific nature of the business. Therefore, the hypotheses developed in this study are considered applicable across a wide range of organizational contexts. Hypothesis 1 was developed and validated for all organizations included in the study. Hypothesis 2 focuses on validating the relationship between the level of motivational support provided by their organizations and project managers' underperformance. Similarly, the ANPMR variable represents the actual contribution of non-project managers, similar to the expected and actual contributions of project managers represents with EPMR and APMR respectively.

4.3. Results and Analysis

A reliability test was conducted on the data to measure internal consistency using Cronbach's Alpha coefficient. **Table 8** presents a comprehensive analysis of the reliability of data on 26 project management practices, 26 motivation factors and their perceived importance. The table includes mean values, standard deviations, and variances for both the PM practices and motivation factors, emphasizing on the level of consensus and the

spread of responses among the respondents. The perceived level of practices conducted by non-project managers (Q6) displays good internal consistency, with a Cronbach's Alpha value of .874. Similarly, the perceived importance of the practices (Q7) demonstrates high reliability, with a Cronbach's Alpha value of .863. The actual level of contributions by project managers (Q8) also continues with the good reliability, with a Cronbach's Alpha of .851, and the importance of the contributions (Q9) exhibits good internal consistency, with a Cronbach's Alpha of .838. The expected contributions from project managers as perceived by organizations (Q10) attain the highest reliability in the table, with a Cronbach's Alpha of .895, while the perceived importance of these expected contributions (Q11) shows very good consistency with a Cronbach's Alpha value of .891. On the motivation factors practice by the organizations (Q12) displays good reliability, with a Cronbach's Alpha value of .891, and the motivational support provide to project managers (Q13) also demonstrate good internal consistency, with a Cronbach's Alpha value of .878. Overall, the data establishes reliable insights into project management practices and motivation factors, with all Cronbach's Alpha values exceeding .8, demonstrating good to very good internal consistency.

Table 8. Reliability of Data of PM and Motivation

Ref	Variables	Mean	Variance	Std. Devi.	Cronbach's Alpha
Q6	Perceived level of practices of project management functions conducted by non-project managers	95.17	149.47	12.23	.874
Q7	Perceived level of importance of activities answered in Q6	99.49	165.46	12.86	.863
Q8	Perceived level of practices of project management functions conducted by project managers	89.25	136.18	11.67	.851
Q9	Perceived level of importance of activities answered in Q8	99.32	130.05	11.40	.838
Q10	Perceived level of practices of project management functions expected from project managers by the organization	96.75	164.51	12.83	.895
Q11	Perceived level of importance of activities answered in Q12	104.06	110.89	10.53	.891
Q12	Perceived level of practice of motivation factors for organization employees	64.62	98.53	9.93	.891
Q13	Perceived level of motivational support provided to project managers by organizations	68.62	71.16	8.44	.878

4.3.1. Analysis of PM Practices in the Organizations

Table 9 provides a detailed descriptive statistical analysis comparing the mean values of project management practices within organizations, the expected contributions of PMRs by these organizations, and the actual contributions of PMRs along with their perceived importance. This analysis reveals the gaps between organizational expectations, the actual performance of PMRs, and the contributions of NPMRs, offering valuable insights into areas where practices meet expectations or where they fall short.

Table 9. Summary of Mean Value of Each Task

ID	Item	Level of Practice			Level of Importance		
		Q6	**Q8**	**Q10**	**Q7**	**Q9**	**Q11**
	Pre-project stage						
A-1	Define project goal, prepare millstone, sketch project plan, and design	4.19	3.77	4.69	4.30	4.28	3.87
A-2	Create work breakdown structure, stakeholder identification, risk analysis specify standard, budget baseline	4.30	3.61	3.69	4.12	3.96	4.31
A-3	Preparation of timeline, identifying resources, negotiation with vendors	4.25	3.59	3.72	4.16	4.52	3.97
A-4	Feasibility study, identify project objectives, create communication structure	3.90	3.20	3.13	4.54	4.26	4.54
A-5	Work with architects and engineers to obtain the specifications of the project	3.41	3.72	3.54	3.78	3.81	3.71
A-6	Obtain necessary permits, meetings with consultants and top management	3.92	4.07	4.13	4.11	4.11	3.84
A-7	Involve in regular planning, progress assessment meetings, allocation of job	4.22	4.38	3.89	3.99	4.44	3.74
A-8	Preparation of health and safety management strategy, involving hiring of external labors	3.05	3.17	4.06	2.84	3.23	4.46
A-9	Involve in the purchase and supervision of equipment, materials, and suppliers selections	2.57	1.81	3.43	2.55	2.64	3.34
A-10	Liaison and consultation with the host community for a successful project	3.34	3.70	1.72	3.89	4.04	2.53
A-11	Implementation of monitoring control measures and operational activities	4.08	3.47	4.01	4.01	4.38	3.84
	Mean	**3.75**	**3.50**	**3.64**	**3.84**	**3.97**	**3.83**
	Execution stage						
B-1	Monitoring project process and progression	4.46	3.83	3.81	4.12	4.09	4.05

B-2	Evaluate resource utilization on the planned estimate and prepare variance analysis	3.63	3.45	4.09	3.83	3.17	4.43
B-3	Tracking the effects, cost, and confirmation of client specifications and standards	3.73	3.42	3.67	3.88	3.48	4.38
B-4	Contractor project evaluation reports	3.29	3.00	4.01	3.30	3.27	3.89
B-5	Confirming safety and hazard prevention on the site	3.11	2.20	3.61	3.53	3.04	4.15
B-6	Freedom to make decisions when necessary and involvement in the prevention of any obstacle/hurdle	2.48	2.55	2.50	3.73	2.94	3.08
B-7	Prepare internal and external reports relating to the project status	3.34	3.14	2.88	3.37	3.27	3.97
B-8	Prepare daily progress reports on the project	3.71	2.51	3.60	3.29	3.68	3.76
B-9	Attending meetings with the top management and clients on project progress	3.92	3.53	3.95	4.44	4.31	4.20
B-10	Encouraging other workers	4.19	3.55	3.83	4.39	4.29	4.45
	Mean	**3.59**	**3.12**	**3.60**	**3.79**	**3.55**	**4.04**
	Post-project stage						
C-1	Involvement in check-list project assessment	4.02	4.07	4.55	3.38	3.85	4.67
C-2	Completing project documents and reviewing project deliverables	3.99	4.30	4.54	4.42	4.33	4.49
C-3	Preparation and getting project results approved and conducting post-implementation audit	3.54	3.34	4.19	3.75	3.96	4.09
C-4	Involve in completing the final project report and handing it over to the client	3.68	4.06	3.49	4.24	4.44	3.71
C-5	Develop lesson learned manual for personal and organizational improvement based on the nature of the project	2.84	3.81	3.98	3.53	3.53	4.59
	Mean	**3.61**	**3.92**	**4.15**	**3.86**	**4.02**	**4.31**

Summary of Mean Value of Each Task

(Q6 = PM practice by the organizations; Q8 = level of PMRs involvement in PM; Q10= level of PM assign to PMR by organization; Q7=importance of Q6; Q9=importance of Q8; Q11=importance of Q10

The expected contribution of PMRs by their organizations, Q10 and Q11, the actual contributions of PMRs, Q8 and Q9, and the actual contributions of Non-project managers, Q6 and Q7, are different from task to task. Each project stage has different characteristics. The execution project stage has notable characteristics that distinguish it from the pre-project and post-project stages, the differences between Q10 and Q8, and between Q11

and Q9, were the largest among the three stages. Furthermore, the difference between Q6 and Q8 and that between Q7 and Q9 are the largest on the table. However, the actual contribution of PMRs as compared with the expected contribution is the lowest at the execution project stage. Non-project managers cover insufficient practice by project managers. At the post-project stage, the mean values of Q10, Q11, Q8, and Q9 are the highest among the three stages. The expected and actual contributions of PMRs are the highest at the post-project stage. The pre-project stage has mixed results on the level of practice and its importance. The mean value of Q8 is lower than Q10, but that of Q9 is higher than Q11. Although the actual level of practice of PMRs is lower than that of the expected level, but its importance level is higher than the expectation.

4.3.2. Analysis of Underperformance and Outperformance of PMRs

In this section, the analysis provided a detailed explanation of the tasks that were either underperformed or outperformed by project managers. The underperformed tasks were identified as those where project managers did not meet expected contributions of the organization. It was found that these tasks often fell short due to factors such as lack of motivation, insufficient training, and external pressures like corruption and political interference. Conversely, the analysis also identified tasks where project managers exceeded expectations, demonstrating high levels of efficiency and effectiveness. This outperformance was attributed to factors such as increased autonomy in decision-making, a sense of professional pride, and a strong sense of responsibility.

4.3.2.1 Identification of Underperformed and Outperformed Tasks

Table 10 shows a summary of the paired t-test between m_{EPMR} and m_{APMR} on PM tasks. This evaluation measures the performance level of PMRs for each task, highlighting any significant differences between expectations and actual outcomes. Among 26 tasks compared for PMR performance, 21 tasks rejected the hypothesis of $m_{EPMR} = m_{APMR}$, and for 5 tasks it was accepted. Among 21 tasks in which the hypothesis was rejected, m_{EPMR} was found to be significantly greater than m_{APMR} for 16 tasks, and m_{APMR} was found to be significantly greater than m_{EPMR} for 5 tasks. Thus, the PMRs underperform 16 tasks and outperform 5 tasks. From these results, we conclude

that the first null hypothesis $H1o$ was rejected. In addition, m_{APMR} was found to be significantly less than m_{ANPMR} for 12 tasks while m_{ANPMR} was significantly less than m_{APMR} for 8 tasks.

Furthermore, according to the comparative value of m_{ANPMR}, underperformed tasks and outperformed tasks are categorized into three groups, respectively. The first underperformed group U1 satisfies Q6Q7>Q10Q11>Q8Q9 and consists of A2, B9, and B10 tasks. The second group U2 satisfies Q10Q11>Q6Q7>Q8Q9 and consists of A1, A9, B2, B3, B4, B5, B7, B8, and C3 tasks. The third group U3 satisfies Q10Q11>Q8Q9>Q6Q7 and consists of A8, C1, C2, and C5 tasks. It was discovered that for Task A8, which involves preparation of health and safety management strategies and the hiring of external labor, most organizations prefer to delegate these responsibilities to health and safety managers or human resource managers who have specialized expertise in these areas. Although high contributions are expected from project managers, these specialized roles are often given greater responsibility. Similarly, Task C1, "involvement in checklist and project assessment," is frequently assigned to operational managers by organizations to ensure that the assessment considers cross-functional impact and provides unbiased result. For Task C5, which involves the development of lessons learned for organizational improvement, many organizations prefer to assign this task to non-project managers to allow project managers to focus on their core tasks while still ensuring that important lessons are captured and recorded. The first outperformed group O1 satisfies Q6Q7>Q8Q9>Q10Q11 and includes A3 only. The second group O2 satisfies Q8Q9>Q6Q7>Q10Q11 and consists of A7, A10, and C4. The third group O3 satisfies Q8Q9>Q10Q11>Q6Q7 and includes A5 only.

To validate Hypothesis 3 for tasks in U2, a paired t-test was conducted. The results indicate significant mean differences between Q6Q7 and Q8Q9 for all tasks except C3. Notably, tasks B2, B3, B5, and B8 show highly significant differences, with high t-values and p-values less than 0.01.

Table 10. Categorization of Project Managers' Performance and t-test associated with Mean Values

Cate-gory	Gro-up	Characteristics	Task	m_{ANPMR} (Q6Q7)	m_{APMR} (Q8Q9)	m_{EPMR} (Q10Q11)	m_{DIFF1} (=m_{EPMR} -m_{APMR})	STDD (Std. dev. of $DIFF1$)	t-value	Sig (2-tailed)	t-test Q6Q7 and Q8Q9	
Under-performed	U1	Q6Q7 >Q10Q11 >Q8Q9	A2	4.21	3.79	4.00	0.214	0.800	3.83	0.000	t-value	Sig (2-tailed)
			B9	4.18	3.92	4.07	0.153	0.950	2.31	0.022		
			B10	4.29	3.92	4.14	0.218	0.969	3.23	0.001		
	U2	Q10Q11 >Q6Q7 >Q8Q9	A1	4.24	4.02	4.28	0.257	1.003	3.68	0.000	2.883	0.004
			A9	2.56	2.22	3.39	1.165	1.038	16.11	0.000	3.368	0.001
			B2	3.73	3.31	4.26	0.947	1.014	13.40	0.000	6.529	0.000
			B3	3.81	3.45	4.02	0.578	1.256	6.60	0.000	4.192	0.000
			B4	3.30	3.14	3.95	0.811	0.819	14.20	0.000	2.280	0.024
			B5	3.32	2.62	3.88	1.262	0.897	20.20	0.000	8.352	0.000
			B7	3.36	3.20	3.42	0.221	1.027	3.09	0.000	2.793	0.006
			B8	3.50	3.10	3.68	0.583	1.302	6.42	0.000	7.176	0.000
			C3	3.65	3.65	4.14	0.490	0.767	9.18	0.000	-0.079	0.937
	U3	Q10Q11 >Q8Q9 >Q6Q7	A8	2.94	3.20	4.26	1.058	0.919	16.52	0.000		
			C1	3.70	3.96	4.61	0.650	0.694	13.45	0.000		
			C2	4.20	4.31	4.51	0.199	0.913	3.13	0.002		
			C5	3.18	3.67	4.28	0.614	1.169	7.54	0.000		
Out-performed	O1	Q6Q7 >Q8Q9 >Q10Q11	A3	4.21	4.06	3.85	-0.211	0.761	-3.99	0.000		
	O2	Q8Q9 >Q6Q7	A7	4.11	4.41	3.82	-0.595	0.979	-8.72	0.000		
			A10	3.62	3.87	2.13	-1.740	1.058	-23.61	0.000		

		>Q10Q11	C4	3.96	4.25	3.60	-0.648	0.907	-10.25	0.000	
	O3	Q8Q9 >Q10Q11 >Q6Q7	A5	3.59	3.76	3.63	-0.138	0.966	-2.06	0.041	
No Significant difference			A4	4.22	3.73	3.84	0.107	0.792	1.94	0.054	
			A6	4.01	4.09	3.98	-0.107	1.256	-1.22	0.224	
			A11	4.04	3.92	3.93	0.007	1.185	0.09	0.930	
			B1	4.29	3.96	3.93	-0.029	1.141	-0.37	0.714	
			B6	3.11	2.75	2.79	0.046	0.796	0.83	0.406	

Figure 5 graphically represents the expected and actual contributions of PMRs across various tasks in different categories. The blue bars represent the expected contributions, while the orange bars indicate the actual contributions made by PMRs. Each task is labeled along the horizontal axis, with the contributions rated on a scale from 0 to 5 on the vertical axis. The graph reveals insights on the actual contributions of PMRs concerning the organizations expectations. A detailed analysis of the characteristics associated with each task will be discussed in the subsequent sections, focusing on understanding the reasons behind these discrepancies and identifying areas for improvement. Overall, this figure serves as a crucial visual tool for understanding where PMRs are underperforming or outperforming, providing a basis for deeper analysis and targeted interventions to enhance project management practices.

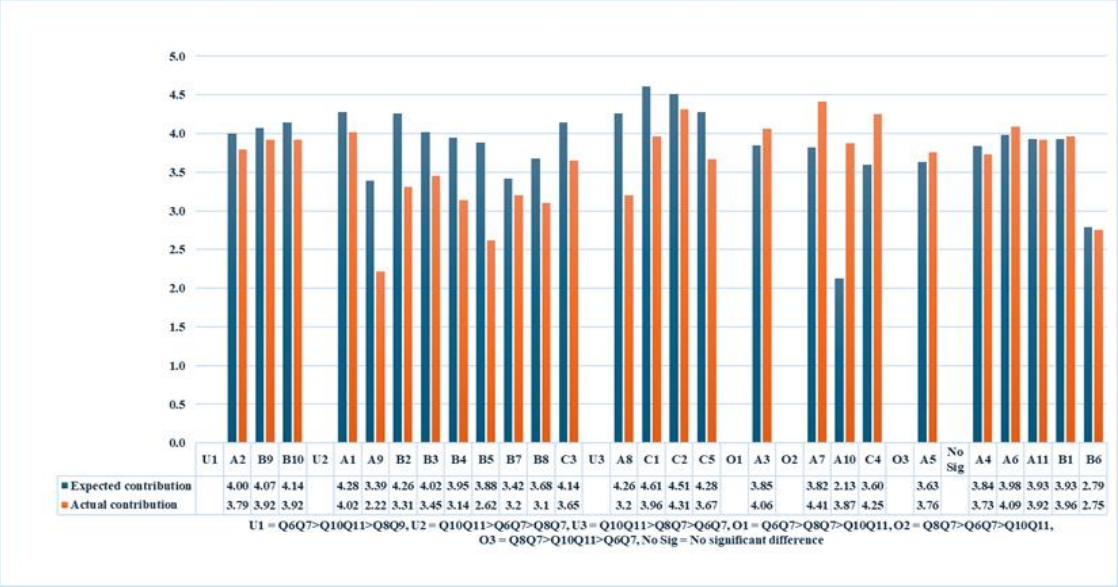

Figure 5. Contribution of PMR and Expected Contribution of PMR by Organizations

4.3.2.1. Analyses of Underperformed Tasks

The analyses identified tasks where PMRs are underperformed. In U1 tasks, organizations allocate more responsibilities to non-project managers, and project managers also perform below the organization's expectations, leaving the roles to non-project managers to perform. These tasks are essential to project success, thus, the reason behind project managers' underperformance needs to be identified especially on how organizations allocate project management responsibilities among project managers and

non-project managers.

Among underperformed tasks, those in U2 need to be paid attention to. In these tasks, the PMRs cannot fulfill the organization's expectations, and their roles are covered by non-project managers. Particularly, tasks with high t-values (greater than or equal to 10) are worthwhile studying the reasons for the severe underperformance of PMRs. These tasks include A9: Involve in the purchase and supervision of equipment, materials, and supplier selections; B2: Evaluate resource utilization on the planned estimate and prepare variance analysis; B4: Contractor project evaluation reports; B5: Confirming safety and hazard prevention on the site. Similarly, in U3 tasks, PMRs fail to meet the organization's expectations for the functions of the tasks. This failure places organizations at high risk because they allocate more responsibilities for these tasks to PMRs. Again there are tasks with a high t-value (greater than 10) that require further study to understand the reasons for the significant underperformance. These tasks with high t-values are A8, C1, and C5 with t-values of 16.52, 13.45, and 7.54 respectively.

Table 11 summarizes their characteristics. Three measures, m_{EPMR}(Q10Q11), m_{ANPMR}(Q6Q7), and m_{APMR}(Q8Q9) are used, and each value is assessed in four ranks. They are H(High): Value ≥4.0, M(Medium): 3.5≤Value< 4.0, L (Low): 2.5≤Value<3.0, VL (Very Low): Value<2.5. There are 7 tasks whose m_{APMR}(Q8Q9) is ranked in "L" or "VL" in U2 and 1 such task in U3. Therefore, in total 8 tasks were identified, and they were characterized into three types.

Table 11. Characteristics of Tasks Insufficiently Contributed by Project Managers

Type	Task	m_{EPMR} (Q10Q11)	m_{ANPMR} (Q6Q7)	m_{APMR} (Q8Q9)	Characteristics
I	A9	L	VL	VL	Low expectation. Very low contribution by both parties.
	B7	L	L	L	Low expectation. Low contribution by both parties.
II	B2	H	M	L	High expectation. NPMR insufficiently plays a role.
	B8	M	M	L	Medium expectation. NPMR plays a role.
III	A8	H	VL	L	High expectation. Low contribution by both parties.
	B5	M	L	VL	Medium expectation. Low contribution by both parties.

	B4	M	L	L	Medium expectation. Low contribution by both parties.

H (High): Value ≥ 4.0, M (Medium): 3.5 ≤ Value < 4.0, L (Low): 2.5≤Value<3.0, VL (Very Low): Value<2.5

Table 11 presents the characteristics of the tasks project managers insufficiently contributed, and the tasks are categorized into three types based on expectations and contributions. The tasks are summarized as follows;

Type I is characterized by "Low expectation and (Very) Low contribution by both parties." This category includes tasks such as A9, which involves the purchase and supervision of equipment, materials, and supplier selections, and B7, which pertains to the preparation of internal and external reports related to project status. For Task A9, the mean values for expected contributions from PMRs m_{EPMR} (Q10Q11), actual contributions from PMRs m_{APMR}(Q8Q9), and m_{ANPMR}(Q6Q7) are 3.39, 2.22, and 2.56, respectively. These values indicate that Task A9 is not seriously recognized as a primary responsibility of project managers, and its fulfillment by both PMRs and NPMRs is significantly lacking. Task B7 shares similar characteristics, though the contributions from both parties are not as low as those for Task A9. As a future research area, it is crucial to explore not only why contributions from both parties are low but also why organizational expectations for these tasks are low in the first place.

Type II is characterized by "Medium or high expectation, but NPMRs (insufficiently) play the roles." Tasks such as B2, which involves evaluating resource utilization against the planned estimate and preparing variance analysis, and B8, which involves preparing daily progress reports on the project, fall into this category. For Task B2, organizations recognize it as a crucial responsibility of project managers. However, since project managers are unable to meet organizational expectations, NPMRs step in to fill the gap. Despite this, their contributions still fall significantly short of what is expected. In the case of Task B8, organizations have medium expectations, and NPMRs take on a role meant for PMRs. For both tasks, it is essential to increase the level of contribution from PMRs. This is especially critical for Task B2, where organizational expectations are high.

Type III is characterized by "High or medium expectation, but low contribution by both parties." Tasks such as A8, which involves preparing a health and safety management

strategy and hiring external labor, B5, which involves confirming safety and hazard prevention on-site, and B4, which involves preparing contractor project evaluation reports, fall into this category. While organizations have high or medium expectations for project managers to fulfill these tasks, the contributions from both PMRs and NPMRs fall significantly short of these expectations. Although non-project managers play some roles in tasks B5 and B4, their contributions are still far below what is anticipated by the organizations.

Type III highlights significant implications for addressing the gap between ideal expectations and reality in project management. Tasks such as A8 and B5, which are related to health and safety (H&S), are fundamentally important responsibilities that management should prioritize. Securing health and safety should, in principle, be one of the top responsibilities of management. Similarly, B4, which involves contractor project evaluation, plays a critical role in effective project management. However, in practice, these responsibilities are not being fully met, indicating a clear disconnect between the ideal standards and the actual execution. One potential reason for this gap is that project managers are often required to prioritize political demands over project demands. Such political pressures may undermine the effectiveness of crucial tasks like contractor project evaluation (B4).

Furthermore, compromising safety to meet cost and schedule targets is a widespread practice across the industry. This study reveals that, while safety managers and human resource managers often handle health and safety issues due to their specialized expertise, project managers ultimately make the final decisions on managing these areas. However, when confronted with political demands, project managers may further compromise on health and safety standards. Investigating the reasons behind the insufficient implementation of tasks classified under Type III is crucial for future research, as it could provide valuable insights into bridging the gap between ideal practices and the reality of project management.

The characteristic of U3 tasks is that organizations have high expectations of PMRs, and although project managers' contributions are generally medium or high (with the exception of A8), they still fall short of meeting these expectations. This shortfall is evidenced by relatively high t-values: 16.52 for A8, 13.45 for C1, and 7.54 for C5. Such underperformance poses a significant risk to organizations. Further research is necessary

to explore the underlying reasons for this notable gap between expectations and actual performance.

In summary, the characteristics of underperformed tasks are varied. In tasks categorized under U1, the contribution from NPMRs significantly higher than the expectations set by organizations for PMRs. In the majority of tasks under U2, with one exception, the contributions by NPMRs significantly exceed those of project managers. A more detailed analysis reveals three distinct types of underperformance: Type I is characterized by low expectations and very low contributions from both PMRs and NPMRs; Type II involves medium or high expectations where NPMRs insufficiently play a role; and Type III features high or medium expectations with low contributions from both parties. Within U3, organizations hold high expectations for PMRs. For instance, task A8, which involves the preparation of health and safety management strategies and the hiring of external labor, is classified under Type III in U2. However, for the other three tasks in U3, PMRs fail to meet organizational expectations, despite their contributions being medium or high.

4.2.3. Risk of Underperformed Tasks

In many cases, project managers (PMRs) encounter a significant gap between ideal expectations and the reality of their performance. **Table 12** presents an analysis of the risk effects associated with PMRs' underperformance across three distinct project stages. This table was developed by examining various project management tasks and identifying the potential risks that arise when these tasks are not performed adequately. It categorizes the tasks into three underperformance groups (U1, U2, and U3) and details specific tasks along with the corresponding risks associated with their underperformance.

It was found that many organizations use NPMRs that specialize in specific tasks. This situation demoralizes PMRs and hinder their effectiveness in performing their roles. During interviews, some respondents highlighted that external factors, such as corruption and political pressure, adversely impact project management implementation, leading project managers to prioritize personal gain over project needs. This, in turn, affects long-term project plans and decision-making processes. For instance, corrupt practices influences procurement decisions, resulting in biased vendor selection. This often causes delays in the supply chain and the provision of substandard materials, significantly

contributing to underperformance in Units 1 and 2. The choice of incompetent suppliers introduces risks associated with tasks A9, B10, and A2. Additionally, political pressure for personal gain often leads to the diversion of project funds, further contributing to underperformance in U1, U2, and U3. The bribery and diversion of funds are linked to risks associated with tasks A2, A9, B3, and A8.

The difference between the ideal and actual appears to be substantial. Particularly, inadequate implementation of tasks categorized under Types I, II, and III poses considerable risks. Future research could focus on identifying which specific task deficiencies contribute to project failures, such as delays, cost overruns, or project abandonment.

Table 12. Examples of Risk of Underperformed PM Tasks by PMRs

	Task (or Involvement)	Risk
		Underperformance U1
A2	Create WBS	incomplete or inadequate decomposition of project deliverables, misalignment with stakeholder expectations, or insufficient level of detail in the WBS.
	Stakeholder identification	incomplete identification of stakeholders, inadequate understanding of their expectations, or misalignment of stakeholder interests
	Risk analysis specify standard	incomplete risk identification, inaccurate risk assessment, failure to specify appropriate standards, or inadequate consideration of organization-specific regulations or requirements
	Budget baseline	inaccurate cost estimation, incomplete consideration of project components, or failure to align the budget with project objectives and constraints
B9	Attend meetings with top management on project progress	Inadequate crucial strategic directions and alignment of organizational goals lead to poor decision-making and risk management.
	Attend meetings with clients on project progress	Misalignment of client expectations, creating communication gaps leading to misunderstandings and mistakes, diminishes client's trust and satisfaction.
B10	Encouraging other workers	excessive encouragement without considering workload and capacity may lead to performance pressure on team members. Encouragement strategies that do not align with team members' preferences and needs may not be as effective, potentially leading to demotivation. Promising rewards or opportunities for growth without following through may lead to a loss of trust and credibility among team members.

	Underperformance U2	
A1	Define project goal	Lack of clear purpose snf directions, misalignment of team efforts leading to inconsistent and uncoordinated efforts, ineffective resource allocation, poor decision-making and reduce motivation and morale.
	Prepare project milstone, gantt chat, and sketch plan to detailed design	Lack of structured workflow, poor time management leading to inaccurate scheduling and potential delays, difficulty in tracking and reporting project progress, reduces accountability and increases risk of project failure.
A9 (I)	Involve in purchase and supervision of equipment, materials	delays in equipment or material delivery, poor supplier performance, cost overruns, non-compliance with quality standards, or inadequate inventory management
	Suppliers selections	poor supplier performance, contractual disputes, lack of supplier capacity, inadequate due diligence or challenges in supplier
		relationship management
B2 (II)	Evaluate resource utilization on the planned estimate and prepare variance analysis	inaccurate tracking of resource usage, incomplete data, insufficient monitoring mechanisms, or poor resource allocation practices and misinterpretation of variances
B3	Tracking the effects	inadequate data collection, difficulty in quantifying or assessing project effects, or failure to consider all relevant stakeholders and impacts
	Tracking cost, and confirmation of client specifications and standard	incomplete or inaccurate cost data, insufficient cost tracking mechanisms, or failure to address cost variances in a timely manner.
B4 (III)	Contractor project evaluation reports	Biased assessments, incomplete or inaccurate data, contractual disputes, or challenges in defining objective evaluation criteria
B5 (III)	Confirming safety and hazard prevention on the site	Inadequate safety measures, non-compliance with safety standards, and lack of safety training or failure to address identified hazards promptly
B7 (I)	Prepare internal and external reports pertaining to the project status	Miscommunication and misunderstanding among team members and top management, reduce accountability leading to difficulties in monitoring individual and team performance, lack of transparency that leads to loss of trust and creates feelings of expectation not being met, causes lack of financial tracking leading to cost overruns and high risk of project failure
B8 (II)	Prepare daily progress reports on the project	Inaccurate data or insufficient information in the daily progress reports, may mislead management and affect decision-making. Bias in progress reports leads to a lack of transparency and diverts focus from actual project execution, reduces focus on critical tasks, loss of project scopes and objectives, and top management disengagement.
C3	Preparation and getting project result approved and conduct post-	Incomplete deliverable or not meeting the required quality standards, which leads to lack project acceptance and dissatisfaction. Incorrect or biased assessment of project outcomes during the post-implementation audit can lead to

	implementation audit	misinterpretation of project performance and affect validity of the audit and the project's success evaluation.
		Underperformance U3
A8 (III)	Preparation of health & safety management strategy	inadequate identification and mitigation of health and safety risks, non-compliance with regulations, or failure to promote a safe working environment
	Involve in hiring of external labors	inadequate/inexperience employee/contractor selection, contractual disputes, poor communication with external labor, or challenges in integrating external labor into the project team.
C1	Involvement on check-list project assessment	Assessment with biased or inaccurate data may lead to incorrect evaluations and conclusions. Misinterpretation of criteria or standards in the check-list could result in inconsistent assessments and unreliable findings. Limited check-list may not cover all relevant project aspects, leads to potential blind spot in the assessment. Identifying areas for improvement in the assessment without developing effective action plans may not lead to meaningful changes. Overreliance on historical data without considering the current project context may lead to irrelevant conclusions.
C2	Completing project documents and review project deliverables	Incomplete project documentation, which may result in the loss of critical project information and incorrect conclusions. Inadequate record keeping may hinder future audits of the project activities and delays deliverables review, which leads to prolong project closure. If project deliverables do not meet client expectations or requirements, it may result in dissatisfaction and damage client relationships.
C5	Develop lesson learnt manual for personal and organizational improvement based on the nature of the project	Insufficient data or information and inadequate engagement from team members and stakeholders may limit the range of lesson and perspectives. This task may face challenges if there is a lack of support or commitment from the organization in promoting a learning culture.

4.3.2.2. Analyses of Outperformance Tasks

The analyses reveal several tasks where project managers outperform the organization's expectations. Among the tasks, task A3 is particularly notable as the only project management task in O1 where project managers outperform expectations, despite being assigned fewer responsibilities. In O2, project managers significantly surpass expectations, particularly in tasks A10 and C4, with t-values of -23.61 and -10.25, respectively. Similarly, in O3, task A5 is stands out with project managers outperforming expectations, with a t-value of -2.06. Interviews indicate that this outperformance is due to the autonomy project managers have in decision-making, which avoids delays associated with waiting for top management approval. Additionally, professional pride

and a strong sense of responsibility are cited as key motivators for their high contributions.

Organizations have noted that the high contributions of project managers offer a range of benefits, including improved project success rates, timely completion, adherence to budget, better resource management, effective risk mitigation, strategic alignment, and continuous improvement. The autonomy in decision-making empowers project managers to take timely actions and make informed decisions, enhancing their efficiency and effectiveness (Tam et al., 2022). This empowerment not only boosts their confidence but also fosters a proactive approach to problem-solving. Furthermore, a strong sense of professional pride and responsibility drives project managers to maintain high standards and deliver exceptional results. These contributions benefit organizations by leading to more successful project outcomes, and optimized resource utilization. Effective risk mitigation helps identify and address potential issues promptly, reducing the prospect of project delays and cost overruns.

4.4. Influence of Underperformance into Motivation Support

The underperformance of PMRs on project management tasks was found to have significantly undermined organizations' trust in their competency. This reduced trust is a key factor contributing to an organizational culture characterized by low motivational support. Project managers frequently encounter unfair working conditions, lack of recognition, limited career advancement opportunities, inadequate job training, and minimal involvement in decision-making processes. These issues lead PMRs to feel undervalued and unappreciated. When project managers perceive that their efforts are neither acknowledged nor rewarded, their motivation to excel diminishes. This sense of undervaluation results in decreased contributions to their project management responsibilities, which further worsens their underperformance. These observations are derived from a qualitative study based on respondents' feedback during interviews.

Consequently, a quantitative study is deemed beneficial. This section first examines the levels of motivational support activities provided to project managers by their organizations. Second, it analyzes how these support activities are influenced by the degree of underperformance of PMRs through correlation analyses. The first part of the study identifies which support activities are more intensively invested in, while the second

part quantitatively assesses the potential impact of PMR underperformance on the levels of motivational support they receive from their organizations. These quantitative analyses complement and strengthen the findings from the previous qualitative studies.

4.4.1 Levels of Motivation Support Activities

Table 13 presents a descriptive statistical analysis of the motivation factors practiced by organizations (Q12) and the actual level of motivation support provided to project managers (Q13). This analysis evaluates the alignment between organizational practices and the support experienced by PMRs. Factors 5 (Sudden changes in projects by the client) and 6 (Delay in responding to requests for information and project materials) were originally rated on a scale where 1 = not practiced, 2 = low practice, 3 = medium practice, 4 = high practice, and 5 = very high practice. To ensure consistency with the scales used for other motivation factors, the responses for these factors were reversed: 1 = very high practice, 2 = high practice, 3 = medium practice, 4 = low practice, and 5 = not practiced.

Understanding and addressing the motivation factors crucial for enhancing project managers' performance and commitment is essential. Therefore, all factors are categorized into three groups:

Group 1: This group focuses on providing opportunities for professional growth, skill development, and autonomy in decision-making. These factors directly impact project managers' motivation to excel in their roles, leading to higher employee satisfaction, improved retention, and a more skilled and committed workforce.

Group 2: This group includes factors that influence the working environment and the quality of workplace relationships. These elements affect job satisfaction, collaboration, and contribute to a positive friendly and supportive work environment.

Group 3: This group focuses on financial and non-financial incentives that support project managers' well-being and job security. These factors are crucial for ensuring financial stability and offering additional motivational benefits.

The results highlight several important characteristics. First, the overall support activities provided by the studied organizations are not intensive, with mean values of 2.49 for Q12 and 2.64 for Q13, indicating levels between "low practice" (2) and "medium practice" (3). Second, there is variation in how support is provided to project managers across different organizations. Specifically, for Group 1, project managers perceive less support for professional development, career advancement, and decision-making authority compared to other employees (Q12 > Q13). For Group 2, the support levels are similar between organizational practices and project managers' perceptions (Q12 ≈ Q13). For Group 3, project managers report receiving more support for financial benefits and non-financial incentives than general organizational support (Q12 < Q13). Detailed findings show that professional development support is rated at 1.87 for Q12 and 1.27 for Q13; job promotion at 2.51 for Q12 and 1.89 for Q13; job training at 2.75 for Q12 and 1.98 for Q13; good relationships with colleagues and supervisors at 3.07 for Q12 and 1.54 for Q13; and involvement in decision-making at 2.85 for Q12 and 2.20 for Q13. These results suggest that, although the practice levels of support are low, the actual motivational support experienced by project managers is even lower.

Table 13. Categorization of motivation factors based on PMR interest

No	**Motivation factors**	**Q12**	**Std. Devi**	**Q13**	**Std. Devi**
	GROUP 1: **Factors that support professional development, career advancement, & decision making authority**				
1	Obtain career development	1.87	.819	1.27	.596
2	Obtain job promotion	2.51	.615	1.89	.798
7	Achieve job training	2.75	.671	1.98	.921
20	Involvement in decision-making	2.85	.626	2.20	.574
21	Freedom to make decisions/autonomy	2.26	.616	3.00	.878
	Mean value	**2.45**		**2.07**	
	GROUP 2: **Factors related to job environment and interpersonal relationships**				
3	Job description	2.56	.774	2.51	.591
4	Appreciate challenges in doing a task	2.25	.651	2.45	.688
5	Sudden changes in projects by the client	3.50	1.016	3.61	.563
6	Delay in responding to requests for information and project materials	3.10	1.031	2.54	.597

8	Good teamwork	3.25	.515	3.17	.534
10	Have good relationships with colleagues and supervisor	3.07	.425	1.54	.743
11	Sufficient communication with supervisor and top management	2.77	.706	3.43	.561
15	Good working condition	2.96	.777	2.72	.674
18	Have a fair time to do a task	2.71	.746	2.71	.609
19	Receive colleagues support	2.21	.942	2.85	.444
22	Good and polite feedback on a job	2.44	.786	2.34	.592
23	Job appreciation	2.39	.823	2.63	.610
24	Receive compliments from superiors	2.39	.853	2.76	.750
25	Have a good working environment and working materials	3.20	.527	2.82	.781
	Mean value	**2.77**		**2.72**	
	GROUP 3: **Factors related to financial and non-financial support**				
9	Obtain Non-financial incentives or vacation	1.35	.687	3.58	.568
12	Obtain financial incentives or other bonuses	1.86	.827	3.28	.564
13	Receive a fair salary paid on time	2.41	.698	2.06	.726
14	Offering non-interest loan	1.32	.627	2.70	.628
16	Job security	2.19	.594	2.83	.563
17	Company keeps to its promises	2.71	.657	2.53	.645
26	Medical insurance and Pension scheme	1.73	.772	3.21	.513
	Mean value	**1.94**		**2.88**	
	Total Mean value	**2.49**		**2.64**	

4.5. Project Managers Contributions and Motivational Support

In this section, correlation analyses were conducted to examine the relationships among all the project managers' tasks and Q13 motivation factors, as well as three groups of motivation factors (Group 1, Group 2, and Group 3). These analyses aimed to determine the relationship between project managers' tasks and motivational support and to assess the significance of these correlations. In this analysis, the difference between each project manager contributions expected by their organizations and each actual contributions is defined as the degree of underperformance. This is represented with $n_{DIFF1} = n_{EPMR} - n_{APMR}$ (Difference in Means of each PMR respondent of Q10Q11 and each PMR respondent of Q8Q9). Responses in Q13 are assumed to reflect the level of motivational support provided by the organizations. A correlation analysis was performed to explore the relationship between project management tasks and the

motivational support provided to PMRs. To examine this relationship in detail, variables were grouped into categories. For the underperformance of each project manager, both underperformed tasks and all tasks were considered. Underperformed tasks are those listed in U1, U2, and U3 in Table 8, which have a negative m_{DIFF1}. Thus, $m_{DIFF1} = m_{EPMR} - m_{APMR}$ is specifically calculated for these underperformed tasks. For motivational factors, three groups defined in Table 11, Groups 1, 2, and 3 were analyzed. A total of eight (=2×4) correlation analyses were conducted, considering different sets of the degree of underperformance and motivational factors: 1) All Tasks, 2) Underperformed Tasks; a) All Motivation Factors, b) Group 1, c) Group 2, and d) Group 3. The results are presented in **Table 14.**

Table 14. Correlation Coefficients between the Degree of Underperformance of PMRs and Levels of Motivation Support

	1) All Tasks		2) Underperformed Tasks	
	r	*sig*	*r*	*sig*
a) All Motivation Factors	-.200**	.004	-.090	.203
b) Group 1	-.262**	.000	-.151*	.032
c) Group 2	-.182**	.009	-.101	.154
d) Group 3	-.130	.063	-.007	.926

N=206
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The results display three key characteristics. First, all correlation coefficients are negative. Second, when comparing all tasks to underperformed tasks, the absolute value of the correlation coefficients between all tasks and all motivational factors and each group is higher than those of underperformed tasks. Third, among the three groups, Group 1 shows the most negatively correlated. It is the only group significantly correlated with the degree of underperformance for both all tasks and underperformed tasks. Group 2 follows as the second most correlated, while Group 3 shows the weakest correlation.

Regarding the first characteristic, it was found that low motivational support for PMRs lowers their motivation and commitment, potentially leading to underperformance in subsequent projects. This implies that the observed relationship may reflect a causal link between motivational support and underperformance rather than the reverse. This study propose a possible existing vicious cycle where underperformance in PMRs leads

to reduced motivational support from organizations, further low motivation and commitment. This cycle is often evident in project delays, cost overruns, and even project abandonment. Therefore, it is reasonable to interpret the results of these correlation analyses as indicating both types of causal relationships. The next chapter will further explore the causal relationship between low motivational support and underperformance. The focus on underperformed tasks aimed to identify their common characteristics.

However, the second characteristic, the weaker negative correlation coefficients with underperformed tasks indicates that this analysis may have suffered from selection bias. Selection bias occurs when study samples are chosen based on a narrow range of dependent variables, leading to an underestimation of the causal effect (King et al. 2012). In this analysis, either the degree of underperformance or the motivational factor could serve as the dependent variable. By focusing solely on underperformed tasks, the analysis introduces selection bias, which underestimates the effect of the motivational factors. Including all tasks, both underperformed and outperforming, would provide a more accurate assessment. The third characteristic offers a significant implication for organizational support. Group 1, which focuses on enhancing project managers' management skills, is particularly crucial. Conceptually, the effectiveness of investment in skill enhancement for each project manager, denoted as *EI*, can be represented by:

$$EI = \frac{Benefit(Group\ 1)}{Cost(Group\ 1, Group\ 2, Group\ 3)} \tag{7}$$

The numerator represents the benefits associated with Group 1 of Motivation Factors, while the denominator reflects the costs associated with implementing all Motivation Factors. It is reasonable to assume that *EI* decreases as the support level for Group 1 decreases. Since Group 1 has the lowest mean value and shows the strongest negative correlation with Motivation Factors, there is a possibility that the *EI* in many of the surveyed organizations is decreasing. Given the current situation, it appears challenging for organizations to generate driving forces and internally enhance the performance of project managers.

4.6 Discussion

In the previous section, we identified underperformance among PMRs across 16 key tasks. Moreover, the mean value for the motivation factors for PMRs was 2.64, signifying a level between low and medium practice. Despite this, 96.1% of surveyed project managers stay with their current organizations, a phenomenon that seems unclear. This chapter aims to contextualize and interpret these observations by employing a game theory model alongside regression analysis to examine the relationship between underperformance and the level of motivational support. Through this approach, we seek to reveal the primary reasons for the observed behavior and the persistence of PMRs within organizations that offer limited motivational support.

4.6.1. Explanation of the Current Situation by Game Theory Model

The persistence of project managers staying at the same organizations despite receiving low motivational support is a prevalent phenomenon. This situation can be interpreted as a result of decisions made by both project managers and their organizations. Game theory provides a valuable framework for analyzing and explaining the rationale behind these decisions. In this section, the study employs a game theory model to elucidate the current situation and the motivations driving these choices.

Table 15 presents a hypothetical payoff matrix that details the strategic interactions and rational decision-making behaviors between PMRs and organizations. Project managers are tend to stay with their organizations when they perceive opportunities for career growth (G_s) while organizations will support PMR career growth when they perceive that the net contributions of PMRs, accounting for the cost of support (I = investment). Organizations are more likely to offer such opportunities when they perceive the value and benefits of investing in project managers' career development. Conversely, project managers are more likely to leave their current organizations if they do not perceive career growth opportunities but perceive support from another organization willing to invest in their career development (G_{os}). In a "non-support" scenario (G_n), organizations do not provide career support, and project managers continue to stay and contribute without this support (C_n).According to respondents in the interviews, project managers often choose to stay with their current organizations due to the high unemployment rate, particularly for project management positions. However, project

managers will leave when they perceive growth opportunities elsewhere (G_{on}) when their current organizations choose a non-supportive approach as a measure (0). This situation has been a prevailing condition between PMRs and organizations in the Nigerian construction industry.

Table 15. Hypothetical Payoff Matrix for PMR and Organization

Player & Strategy		Organization	
		Support	Non-support
PMR	Stay	(G_s, C_s)	(G_n, C_n)
	Leave	$(G_{os}, -I)$	$(G_{on}, 0)$

Where:

G_s: Individual Growth with organization support perceived by PMR

G_n: Individual Growth without organization support perceived by PMR

G_{os}: Individual Growth in other organizations perceived by PMR with support in the current organization

G_{on}: Individual Growth in other organizations perceived by PMR without support in the current organization

C_s: Net contribution of PMR with organization support perceived by the organization

C_n: Contribution of PMR with no organization support perceived by the organization

I: Cost of Support (Investment).

The organization's decision to support or not support PMRs depends on the probability that PMRs will leave the organization after receiving support. Here, P represents the probability, as perceived by the organization, that a PMR will stay with their organizations. Assuming that the organization's perception of the PMR's growth aligns with the PMR's self-perception, the hypothetical expected payoff matrix for both the PMR and the organization, as perceived by the organization, is presented in Table 16.

Table 16. Hypothetical Expected Payoff Matrix for PMR and the Organization, which are Perceived by the Organization

Player & Strategy		Organization	
		Support	Non-support
PMR	Stay	(PG_s, PC_s)	(PG_n, PC_n)
	Leave	$\big((1-P)G_{os}, -(1-P)I\big)$	$\big((1-P)G_{on}, 0\big)$

P: The probability perceived by the organization that PMR stays at the organization

This study found that 96.1% of respondents have worked in only one organization. Therefore, in this analysis, it is assumed that $P = 1$. It is important to note that P may also be influenced by the level of organizational support, I. Since this is the first attempt to explain the current situation, P is assumed to be independent of I for the sake of simplicity. The relationship between I and P will be addressed in future discussions. Given these assumptions, the expected payoff matrix is simplified and presented in Table 17.

Table 17. Hypothetical Expected Payoff Matrix for PMR and the Organization, which are Perceived by the Organization when *P*=1

Player & Strategy		Organization	
		Support	Non-support
PMR	Stay	(G_s, C_s)	(G_n, C_n)
	Leave	$(0, 0)$	$(0, 0)$

When the following conditions are satisfied, (stay, support) becomes the dominant strategy.

$$C_s \geq C_n \quad (8)$$
$$f(I) = g(I) - I \geq 0 \quad (9)$$
$$C_s = C_n + g(I) - I = C_n + f(I) \quad (10)$$

where
$g(I)$: The gross contribution of support
$f(I)$: The net contribution of support

4.7. Graphical Representation of Motivation Factors

In the explanation of previous section, it was determined that the (stay, support) emerges as the dominant strategy under certain conditions. To understand these conditions, it is necessary to explain how C_s, C_n, and $f(I)$ are represented**.** Section 4.4 discussed the causal relationship between the degree of underperformance and the level of motivational support that provides further context for these conditions. In this section, we graphically represent C_s, C_n, and $f(I)$ using the causal effect relationship between the level of motivational support and the degree of underperformance. **Figure 6-a** illustrates the regression analysis between the degree of underperformance and the level of motivational support. The vertical axis, y_1, is $C_e - C_s$, the difference between the

contribution expected by the organization from the PMR and the net contribution of the PMR with organizational support as perceived by the organization. The horizontal axis represents the level of organizational support.

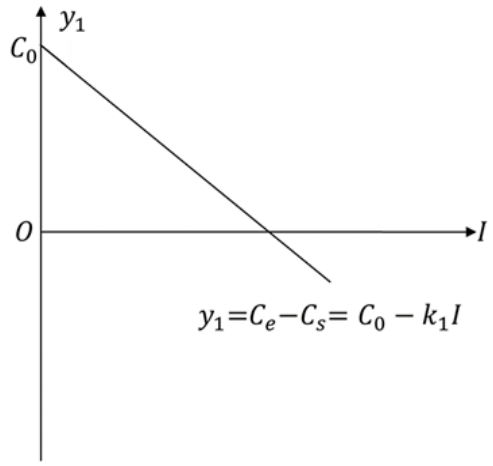

Figure 6-a. Image of the Regression Analysis

Three notable assumptions are made in this analysis. First, the mean value of Q10Q11, denoted as n_{EPMR}, is interpreted as C_e representing the expected contribution of the PMR; hence, it is assumed that $n_{EPMR} = C_e$. Second, the mean value of Q8Q9, denoted as n_{APMR}, is assumed to represent C_s, the net contribution of the PMR with organizational support as perceived by the organization, making the vertical axis y_1, becomes $C_e - C_s$. Third, while the game theory model treats I as a discrete variable, either to invest or not. Figure 6-a shows I as a continuous variable. Consequently, in this context, both I and C_s are treated as continuous variables.

Figure 6-b depicts the effect of investment of support. Suppose

$$y_2 = C_s - C_n = f(I) = k_2 I \quad (11)$$

Holds. For the sake of simplicity, the net effect of I is assumed to be linear, as the primary purpose of this discussion is to explain the impact of investment support.

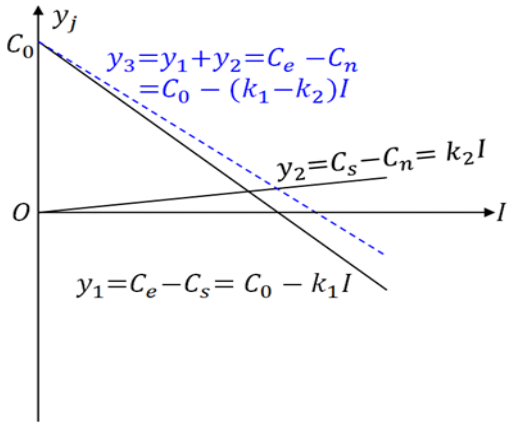

Figure 6-b. Effects of Support of Training

Then,

$$y_3 = y_1 + y_2 \quad (12)$$

This represents a hypothetical situation of how each respondent would perform before receiving support from the organization. After PMRs receive motivational support I, their performance line improves from y_3 to y_1.

4.8 Results of Regression Analysis

The next step is to concretely explain y_1 and I. This will be achieved through regression analysis, where $n_{EPMR} - n_{APMR}$ is set as the dependent variable and Group 1, Group 2, and Group 3 are used as independent variables. A stepwise regression analysis was conducted to analyze these relationships, with the results presented in **Table 18.** Among the three groups of motivation factors, only Group 1 emerged as a significant variable. The unstandardized coefficients for the Constant and Group 1 are 0.694 and -0.225, respectively, with a p-value of 0.000, supporting the reliability of this finding. In the subsequent statistical analysis, the value of Group 1, which includes factors supporting professional development, career advancement, and decision-making authority, is used to represent I for two key reasons: First, it is the only significant variable among the motivational factor variables. Second, the factors in Group 1 are considered critical for enhancing the management skills of project managers. Therefore, in **Figures 6-a and 6-b**, C_0 is set at 0.694, and k_1 is 0.225.

The values of R, R Square, and Adjusted R Square are 0.262, 0.069, and 0.064, respectively. These results indicate that the regression model does not successfully explain much of the variance in the degree of underperformance. Multiple reasons could

account for the low explanatory power of the model. Among them, multiple levels of institutional factors including political factors, weak governance, and organizational culture seem to be noteworthy. These factors will be revisited and further explored in Section 5.6.

Table 18. Results of Multiple Regression Analysis between the Degree of Underperformance and Motivation Factors

Independent variables	Unstandardized Coefficient	*t*	*Sig*	Tolerance	*VIF*
Constant	.694	5.649	.000	---	---
Group 1	-.225	-3.876	.000	1.000	1.000
Group 2	---	---	---	---	---
Group 3	---	---	---	---	---

4.9 Implication from the Game Theory Model

Here, an important implication arises. Although $k_2 \geq 0$, satisfies Equation (13), it does not necessarily imply that $y_1 = C_e - C_s \geq 0$, meaning that underperformance is overcome.

Figure 6-c illustrates the distribution of respondents' answers with an ellipse. The shaded area represents those who outperform their organization's expectations, while the unshaded area indicates underperformance. In the survey, 26.8% of respondents were identified as outperformers ($C_s \geq C_e$) while 73.2% were underperformers ($C_e > C_s$).

Results from **Table 13** show that the mean value of Group 1 of motivational factors, **,** is 2.07, indicating “low practice” of motivational support. This suggests that organizations provide only minimal support, making (stay, support) the dominant strategy. Consequently, many PMRs fall into the category of underperformance.

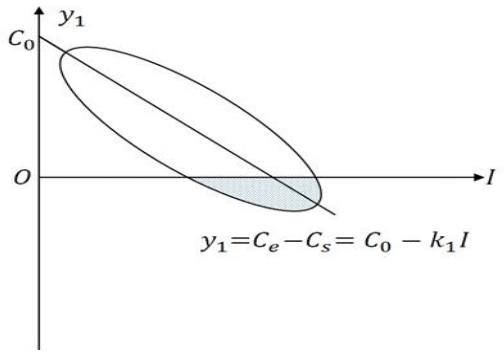

Figure 6-c. Distribution of Responses

The game theory model gives another implication. From Table 17, the expected payoff of the organization when it takes the "Support" strategy (EPOS), is given by:

$$EPOS = PC_s - (1 - P)I$$

Its expected payoff associated with the "Non-Support" strategy (EPON), is given by:

$$EPON = PC_n$$

In order for "Support" to become a better strategy than "Non-Support," the next equation should hold:

$$C_s - C_n \geq \frac{1 - P}{P} I \tag{13}$$

When $P = 1$, Equation (13) is reduced to Equation (8). As P decreases, the value of $\frac{1-P}{P}$ increases. It is possible to interpret that, thus, the minimum organizational support becomes feasible at a high probability of P, which is partially caused by the high unemployment ratio.

4.9 Simulation of Improvement of Performance Using the Results of Regression Analysis

There are multiple measures exist to enhance the performance of PMRs. One approach is to provide more effective support from the organization, represented by an increase in the value from k_2 to k_2' $(k_2 < k_2')$ as shown in Figure 7-a. In this scenario, y_1 is transformed into y_1'. Figure 3-b illustrates that an increase in the effectiveness of motivational support is equivalent to setting $(0,\ C_0)$ at the center and rotating each point $(I,\ y_1)$ clockwise by an angle θ. All points of $(I,\ y_1)$ are transformed and the ratio of outperformers is computed. The impact of this transformation is shown in Figure 7-c. It is important to note that y_1' may not become the regression line of the transformed data; further explanation is provided in the Appendix 2.

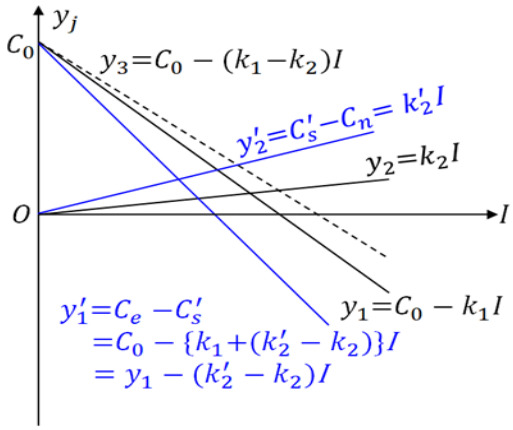

Figure 7-a. Provision of More Effective Support

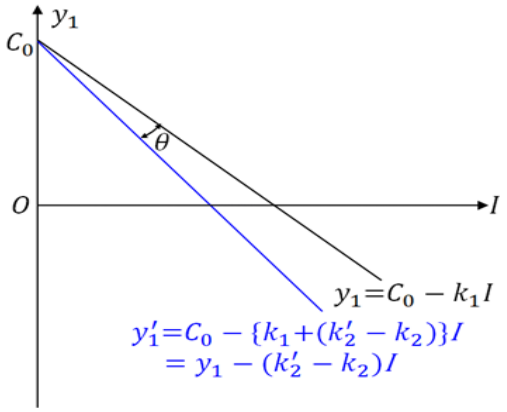

Figure 7.b. Interpretation of Increase in Effectiveness of Motivational Support

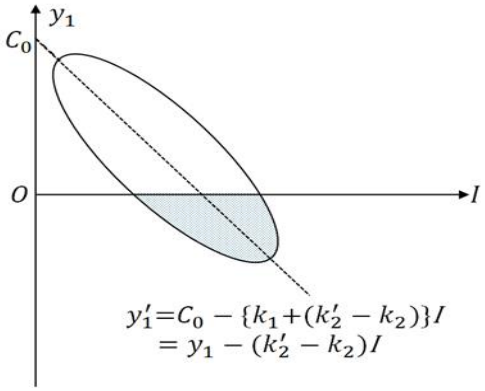

Figure 7-c. Impact of Increase in Effectiveness of Motivational Support

Another measure is to change the constant. This would shift the line of y_1 downward by C_C resulting in a new line at y_1'' as depicted in **Figure 7-d.** The impact of this adjustment is illustrated in **Figure 7-e.**

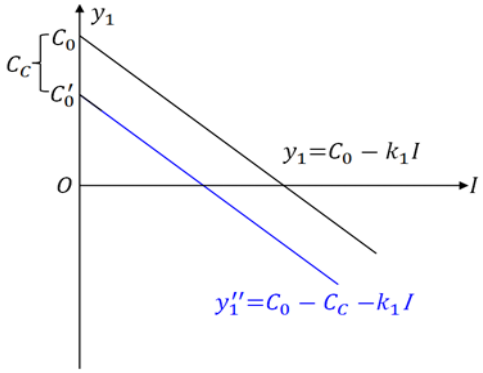

Figure 7-d. Change of Constant

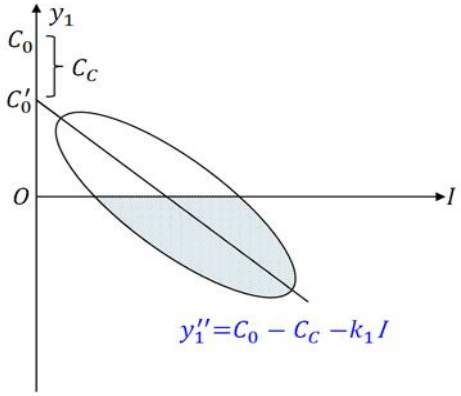

Figure 7-e. Impact of Change of Constant

Figure 8 shows the results of the preliminary simulation. The horizontal axis represents the rate of change, while the vertical axis displays the ratio of outperformer. The values on the horizontal axis are given by:

$$\Delta_{Group\ 1}=\frac{k_2'-k_2}{k_1}=\frac{k_2'-k_2}{(k_1-k_2)+k_2} \tag{14}$$

$$\Delta_{Constant}=\frac{C_0-C_0'}{C_0}=\frac{C_C}{C_0} \tag{15}$$

These equations represent changes in Group 1 (motivation factors) and the constant (which has not yet been explained as representing embedded factors). $\Delta_{Group\ 1}$ describes the rate of change in motivational support by comparing the difference between the k_2' and k_2 relative to k_1. $\Delta_{constant}$ describes the rate of change in the constant.

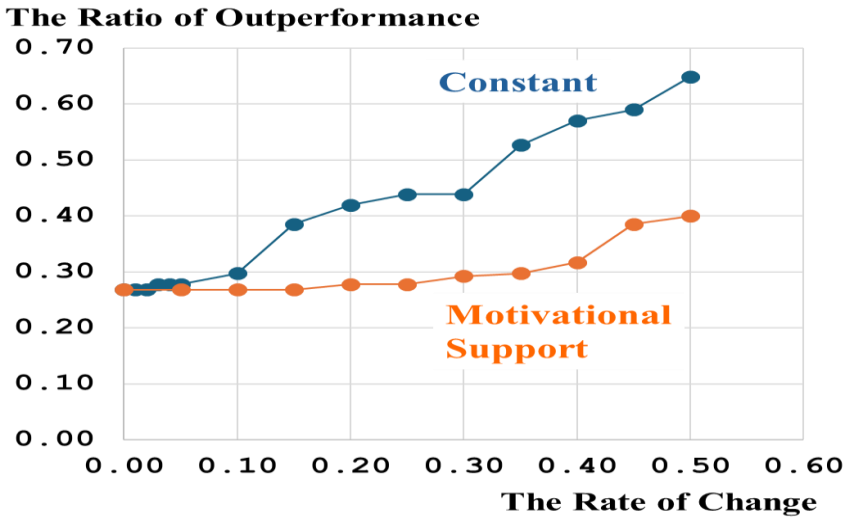

Figure 8. Simulation Results of Improvement of Performance of PMRs

As the rates of change in motivational support and the constant increase, both ratios of outperformers increase. Throughout the range of these rates of change, the constant condition consistently shows a higher ratio of outperformers compared to the motivational support condition. These results, depicted in **Figure 8,** reflect the low Adjusted R Square value of 0.064 from the regression analysis (Table 18). This research made two significant claims regarding PMR underperformance: first, various institutional factors, such as political issues, weak governance, and organizational culture, negatively impact project manager performance, represented in the constant. Second, a vicious cycle exists where PMR underperformance leads to low motivational support from organizations, which further exacerbates underperformance. These findings imply that while motivational support is a measure to enhance performance, its effectiveness is limited, and the impact of multiple institutional factors is large. The findings suggest that despite efforts to use motivational support to improve performance, its impact on performance is limited, highlighting the need for further investigation into the effectiveness of each institutional factors.

4.10 Conclusion

This study treated conclusions made by study one as hypotheses and sought to validate them through a quantitative analysis of project management practices, along with the performance and commitment of project managers (PMRs) in the Nigerian Construction Industry (NCI). The research involved gathering data from 206 project managers and organizations, which were then analyzed using descriptive statistics to assess project management practices, expected contributions, and actual contributions of PMRs. The study focused on three primary questions.

The first question sought to identify whether there were tasks underperformed relative to organizational expectations and to determine which specific tasks were underperformed. The analysis revealed that out of 26 tasks typically assigned to project managers, 16 were underperformed, 5 were outperformed, and 5 tasks showed neither underperformance nor outperformance. Tasks during the execution stage were most prone to underperformance, with political pressures and organizational culture, such as the assignment of certain tasks to non-project managers (NPMRs), identified as contributing factors. Specific tasks that require attention due to low contribution by PMRs include health and safety management, equipment and materials procurement, resource utilization evaluation, and project reporting.

The second question explored whether the underperformance of PMRs led to reduced motivational support from organizations. The study identified 26 motivational factors categorized into three groups: professional development, job environment, and financial/non-financial support. Correlation analyses demonstrated a significant negative relationship between underperformance and all motivational factors, supporting the hypothesis of a vicious cycle between PMR underperformance and low organizational support. The study used a game theory model and regression analysis to explain why, despite low motivational support, 96.1% of PMRs remained with their organizations. The analysis suggested that minimal organizational support persists due to high unemployment rates in Nigeria, making it a rational choice for PMRs to stay.

The third question aimed to explain the phenomenon of PMR underperformance despite the presence of some support. Simulations conducted by increasing the regression coefficients for motivational factors indicated that while enhancing organizational support could potentially improve PMR performance, its effectiveness is limited by

external pressures, such as political influence and weak enforcement of regulations. The study concluded that a comprehensive approach is necessary to address the underperformance of PMRs. This includes not only increasing organizational support but also addressing broader institutional challenges, thereby reaffirming the need for a multifaceted strategy to tackle the issue of underutilization of project managers in the NCI effectively.

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CHAPTER 5. CONCLUSION AND RECOMMENDATIONS

This study conducted a comprehensive analysis of the causes of the underutilization of project managers in the Nigerian Construction Industry (NCI). By applying institutional analysis, it explored how embeddedness, the institutional environment, governance, and resource allocation contribute to this issue. A significant finding is the identification of a vicious cycle of uncertainty and anxiety among project managers and their organizations. Project managers worry about career growth, motivational support, and organizational commitment, while organizations question the ability and commitment to their jobs and their loyalty to their organizations. This mutual distrust exacerbates the underutilization of project managers The study further identifies an institutional issue where underperformance and reduced commitment among project managers are results of a challenging environment marked by political pressures, corruption, religious and tribal sentiments, and weak governance. These external factors hinder project managers from realizing their full potential, leading organizations to misjudge their true performance, which perpetuates low trust and insufficient support.

To validate these conclusions, the study employed quantitative methods to measure project management practices and the performance of project managers in the NCI. It was found that 16 out of 26 tasks typically assigned to project managers were underperformed, particularly during the execution stage of projects. Correlation analyses revealed a significant negative relationship between underperformance and motivational support from organizations, suggesting a two-way causal relationship between the underperformance of PMRs and low motivational support. The study also employed game theory and regression analysis to explain why these phenomena occur, highlighting the limitations of motivational support in improving performance due to external pressures and organizational culture. The study emphasizes the need for a comprehensive approach to addressing the underutilization of project managers in the NCI. It highlights the importance of understanding the institutional nature of the problem and the necessity of identifying responsible parties for implementing solutions. The findings challenge the traditional view of the organizations that underperformance is solely due to the project managers' abilities, commitment and loyalty. Suggesting that external factors play a

significant role and that organizational support, while necessary, is not sufficient on its own. In addition to the overall recommendation, this study further identify the need for Proper accreditation and certification of project management professionals should be prioritized to ensure that individuals possess the necessary skills, knowledge, and standards required to manage construction projects effectively, thereby enhancing overall project performance and accountability in the industry.

5.1 The Major Core Findings of the Study

- ✓ The study reveals that the underutilization of project managers in the Nigerian Construction Industry (NCI) is driven by institutional environment comprising factors such as embeddedness, institutional environment, governance, and resource allocation.
- ✓ A critical finding is the vicious cycle of mutual uncertainty and distrust between project managers and their organizations.
- ✓ The study identifies several external factors that negatively impact project managers' performance, including political pressures, corruption, religious and tribal sentiments, and weak governance.
- ✓ There is a significant gap between the true and observed performance of project managers.
- ✓ The study used four-level framework of institutional analysis in clarifying the problem's structure of underutilization
- ✓ The study found that Out of 26 tasks generally assigned to project managers, 16 tasks were found to be underperformed, while 5 tasks were outperformed and 5 tasks neither underperformed nor outperformed and among the 16 tasks PMR insufficiently contributes in seven tasks.
- ✓ The vicious cycle where underperformance leads to decreased motivational support, which in turn exacerbates underperformance was found.
- ✓ The provision of minimum level of support is not always sufficient to transform underperformers into outperformers
- ✓ It was revealed that increase in motivational support alone does not significantly

improve project manager's performance but embedded factors such as political pressure, weak laws and regulations and cultural factors have more effect in the performance of project manager.

5.2 Research Implications

The research implications of this study are significant and multifaceted, offering valuable insights into addressing the underutilization of project managers in the Nigerian Construction Industry. They are include:

- The complex interrelationship between embeddedness, institutional environment, governance, and resource allocation, revealing how these factors contribute to the underutilization of project managers. By identifying the vicious cycle of mutual distrust and the Institutional nature of underperformance and low commitment. This understanding can guide NCI, organizations, and practitioners in developing strategies that are more effective to tackle the root causes of underutilization.
- The findings that political influences, corruption, and weak governance significantly impact project managers' performance and commitment.
- The application of the four-level framework of institutional analysis provides a novel perspective on the problem of underutilization, which helps in breaking down the problem into manageable components and identifying specific areas for intervention.
- The clarification of the structure of the underutilization problem and identifying key components of the solution, this study provides practical guidance for addressing these issues.
- The identification of a vicious cycle between underperformance and low motivational support adds significant weight to the argument that institutional issues need addressing.
- The use of game theory in explaining the relationship between organizational support and project manager performance provides a novel approach to understanding these dynamics.

5.3 Theoretical Contributions

The academic novelty of this study lies in its comprehensive approach to understanding the structure of underutilization of project managers in the construction industry, particularly within the Nigerian context. It identifies the underlying factors contributing to the perceived uncertainty regarding project managers' abilities, including a complex system of political, legal, and social influences. The study reveals that underperformance is driven by embedded factors like corruption, political influence, and tribal sentiments, which affect not only individual performance and the broader institutional environment by influencing the effectiveness of contract law, employment and work law, and government policies. A dual-subsystem framework is introduced to explain how underperformance and lowered commitment among project managers are generated: one subsystem focuses on the external constraints created by ineffective governance and legal frameworks, while the other highlights the internal organizational culture characterized by a lack of support, unfair working conditions, and minimal motivational incentives. These mechanisms perpetuate underperformance through both external constraints such as ineffective contract law and unstable policies, and a low-trust organizational environment that results in reduced support and motivation. The study demonstrates the interconnection between political, legal, and organizational factors, showing how external factors such as corruption and regulatory instability, directly influence internal organizational culture and project manager performance.

The novelty further extends by proposing methods to identify and analyze these relationships through the development of a game theory model combined with regression analysis. This approach made it possible to determine that the (Stay, Support) strategy emerges as the dominant strategy for PMRs and their organizations, revealing that the level of motivational support at this dominant solution is the minimum. The analysis also suggests that embedded factors significantly influence PMRs' performance. By integrating institutional theory with organizational behavior and employing innovative analytical methods, the study provides empirical evidence of how institutional factors in developing countries impact project success outcomes and highlights the institutional barriers to effective project management. The proposed methods offer a foundation for comprehensive analysis aimed at finding a global optimum solution to the issue of PMR

underperformance in the NCI. This integrated approach calls for institutional transformation by suggesting legal and regulatory reforms for a more stable governance structure and a shift in organizational culture towards support, fairness, and trust. The findings offer practical implications for policymakers, industry stakeholders, and organizations, emphasizing the need for targeted strategies to combat corruption, improve regulatory frameworks, and foster supportive environments that enhance project manager performance and commitment.

5.4 Limitations of the Research

i. The study's sample collection was limited to four geopolitical regions instead of covering all six regions in Nigeria, which may restrict the generalizability of the findings.
ii. Additionally, there was an uneven distribution of interviewees among different professional positions, potentially leading to biased responses.
iii. The study's findings are based on a relatively small sample size of 206 project managers and construction organization respondents in Nigeria, with only 36 interviewees.
iv. This limited sample size raises concerns about the representativeness and reliability of the responses, especially given the small number of organizational representatives interviewed.

5.5 Recommendations for Future Research

The research aimed at solving the issue of poor performance in construction projects that leads to project delays and cost overruns. Future research should include data from all six geopolitical regions of Nigeria rather than just four to ensure a more comprehensive and representative sample. Additionally, efforts should be made to achieve a more even distribution of interviewees among different professional positions to reduce potential bias and enhance the generalizability of the findings.

Following up on the need to enhance the reliability and generalizability of findings, future studies should aim to increase the number of project managers and organizational

participants beyond the 206 respondents and 36 interviewees used in this study. A larger and more diverse sample would provide a more comprehensive representation of the NCI, capturing a broader range of perspectives and experiences. This increase in sample size would also help mitigate the potential bias that may arise from the uneven distribution of participants across different professional positions, leading to more robust and universally applicable conclusions. By addressing these areas, future research can build on the foundation laid by this study, offering more precise insights into the institutional issues affecting project managers in Nigeria.

Exploring additional factors influencing underperformance is recommended to future research by investigating other significant factors such as political influences and organizational culture that contribute to PMR underperformance in the Nigerian Construction Industry. These factors were identified as crucial and a deeper understanding of their impact would provide a more comprehensive analysis. This include exploring the impact of political pressures, regulatory enforcement, and organizational culture on PMR performance. This would allow for a more understanding of the factors that influence underperformance and underutilization.

APPENDIX 1

Study 1: Flawed Institutional Structures: Project Managers Underutilized in Nigerian Construction Industry

Aim: This research aims to conduct an institutional analysis to identify causes of project manager underutilization in NCI and propose potential solution directions.

1.1 Research Objectives

- To identify the factors within the institutional framework that hinder the effective utilization of PMR and the implementation of project PM practices.
- To analyze how these factors interact and influence project success outcomes.
- To develop recommendations to address the adverse effects of these factors on the utilization of PMR.
- To propose strategies for improving the effectiveness of project management in the Nigerian construction industry

1.2 Interview Questions

- ✓ Perceptions of project management practices within organizations
- ✓ What are the factors that affect project management practices
- ✓ How do the factors influence project managers performance
- ✓ What are the level of motivational support on project managers

- ✓ How does the motivational support influence project managers performance

Study 2: Valuation of Project Managers to Enhance Performance in Nigeria's Construction Industry

Aim: to investigate and identify the causes of underperformance among PMRs that lead to their low commitment and contributions in projects, resulting in project delays and cost overruns.

2.1 Objectives:

- ✧ To identify which tasks project managers underperform in the Nigeria construction industry and to what extent

- ✧ To examine whether project managers underperformance results in reduced motivational support from organizations

- ✧ To analyze causes of underperformance of project management practices in the Nigeria construction industry

- ✧ To propose a method to explore strategies to enhance project managers performance

2.2 Survey Questions

- ◆ The level of project management practices in the construction organizations

- ◆ The level of project managers involvement in the project management practices

- The Level of project management tasks assign to project managers by the organizations

- The level of motivation factors practice by the organizations

- The level of motivational support provide to project managers by the organization

APPENDIX 2

Suppose that we want to represent $\boldsymbol{y}$ with the following regression model.

$$\boldsymbol{y} = a\boldsymbol{x} + b\boldsymbol{1} + \boldsymbol{\varepsilon}$$

where

$$\boldsymbol{y} = [y_1, y_2, \dots, y_n]^T \in \boldsymbol{R}^n$$
$$\boldsymbol{x} = [x_1, x_2, \dots, x_n]^T \in \boldsymbol{R}^n$$
$$\boldsymbol{1} = [1, 1, \dots, 1]^T \in \boldsymbol{R}^n$$

$\boldsymbol{\varepsilon}$ is the error vector and is represented with

$$\boldsymbol{\varepsilon} = [\varepsilon_1, \varepsilon_2, \dots, \varepsilon_n]^T \in \boldsymbol{R}^n$$

Setting

$$L = \|\boldsymbol{\varepsilon}\|^2 = \|\boldsymbol{y} - (a\boldsymbol{x} + b\boldsymbol{1})\|^2$$
$$= \|\boldsymbol{y}\|^2 + a^2\|\boldsymbol{x}\|^2 + 2nab\mu_{\boldsymbol{x}} + nb^2 - 2a\boldsymbol{x}^T\boldsymbol{y} - 2nb\mu_{\boldsymbol{y}}$$

where

$$\mu_x = \frac{1}{n}\boldsymbol{x}^T\boldsymbol{1}$$
$$\mu_y = \frac{1}{n}\boldsymbol{y}^T\boldsymbol{1}$$

When we use the ordinary least square method to obtain the regression coefficients, a and b, they must satisfy the following equations.

$$\frac{\partial L}{\partial a} = 2a\|\boldsymbol{x}\|^2 + 2na\mu_{\boldsymbol{x}} - 2\boldsymbol{x}^T\boldsymbol{y} = 0 \qquad (A1)$$

$$\frac{\partial L}{\partial b} = 2na\mu_{\boldsymbol{x}} + 2nb - 2n\mu_{\boldsymbol{y}} = 0 \qquad (A2)$$

Solving Equations $(A1)$ and $(A2)$ yields

$$a = \frac{\boldsymbol{x}^T\boldsymbol{y} - n\mu_x\mu_y}{\|\boldsymbol{x}\|^2 - n\mu_{\boldsymbol{x}}{}^2} = \frac{COV[\boldsymbol{x}, \boldsymbol{y}]}{VAR[\boldsymbol{x}]} \qquad (A3)$$

$$b = \mu_y - a\mu_x \tag{A4}$$

Where

$$E[\boldsymbol{x}] = \frac{1}{n}\boldsymbol{x}^T\mathbf{1} = \mu_x$$

$$VAR[\boldsymbol{x}] = E[\|\boldsymbol{x} - E[\boldsymbol{x}]\mathbf{1}\|^2]$$
$$= E[\|\boldsymbol{x} - \mu_x\mathbf{1}\|^2] = E[\|\boldsymbol{x}\|^2] - {\mu_x}^2 = \frac{1}{n}\|\boldsymbol{x}\|^2 - {\mu_x}^2$$
$$COV[\boldsymbol{x}, \boldsymbol{y}] = E[(\boldsymbol{x} - E[\boldsymbol{x}]\mathbf{1})^T(\boldsymbol{y} - E[\boldsymbol{y}]\mathbf{1})] = \frac{1}{n}\boldsymbol{x}^T\boldsymbol{y} - \mu_x\mu_y$$

Suppose the j^{th} components of $\boldsymbol{x}$ and $\boldsymbol{y}$ are given by x_j and y_j, respectively. The pair of x_j and y_j is represented with point (x_j, y_j) in x-y coordinate. Now we rotate this point by θ clockwise. This point is move to

$$\begin{bmatrix} x_j' \\ y_j' \end{bmatrix} = \begin{pmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{pmatrix}\begin{bmatrix} x_j \\ y_j \end{bmatrix} = \begin{bmatrix} x_j\cos\theta + y_j\sin\theta \\ -x_j\sin\theta + y_j\cos\theta \end{bmatrix}$$

Thus, after rotation, new vectors $\boldsymbol{x}'$ and $\boldsymbol{y}'$ are given by

$$\boldsymbol{x}' = \boldsymbol{x}\cos\theta + \boldsymbol{y}\sin\theta$$
$$\boldsymbol{y}' = -\boldsymbol{x}\sin\theta + \boldsymbol{y}\ \cos\theta$$

The following equations are satisfied.

$$\mu_{x'} = \frac{1}{n}\boldsymbol{x}'^T\mathbf{1} = \frac{1}{n}(\boldsymbol{x}^T\mathbf{1}\cos\theta + \boldsymbol{y}^T\mathbf{1}\sin\theta) = \mu_x\cos\theta + \mu_y\sin\theta$$
$$\mu_{y'} = \frac{1}{n}\boldsymbol{y}'^T\mathbf{1} = \frac{1}{n}(-\boldsymbol{x}^T\mathbf{1}\sin\theta + \boldsymbol{y}^T\mathbf{1}\cos\theta) = -\mu_x\sin\theta + \mu_y\cos\theta$$

$$\|\boldsymbol{x}'\|^2 = \|\boldsymbol{x}\cos\theta + \boldsymbol{y}\sin\theta\|^2 = \|\boldsymbol{x}\|^2\cos^2\theta + \boldsymbol{x}^T\boldsymbol{y}\sin 2\theta + \|\boldsymbol{y}\|^2\sin^2\theta$$
$${\mu_{x'}}^2 = (\mu_x\cos\theta + \mu_y\sin\theta)^2 = {\mu_x}^2\cos^2\theta + \mu_x\mu_y\sin 2\theta + {\mu_y}^2\sin^2\theta$$
$$\boldsymbol{x}'^T\boldsymbol{y}' = (\boldsymbol{x}\cos\theta + \boldsymbol{y}\sin\theta)^T(-\boldsymbol{x}\sin\theta + \boldsymbol{y}\ \cos\theta)$$
$$= -\|\boldsymbol{x}\|^2\sin\theta\cos\theta + \boldsymbol{x}^T\boldsymbol{y}\cos^2\theta - \boldsymbol{x}^T\boldsymbol{y}\sin^2\theta + \|\boldsymbol{y}\|^2\sin\theta\cos\theta$$
$$= \frac{1}{2}(\|\boldsymbol{y}\|^2 - \|\boldsymbol{x}\|^2)\sin 2\theta + \boldsymbol{x}^T\boldsymbol{y}\cos 2\theta$$

$$\mu_{x'}\mu_{y'} = (\mu_x\cos\theta + \mu_y\sin\theta)(-\mu_x\sin\theta + \mu_y\cos\theta)$$
$$= -{\mu_x}^2\sin\theta\cos\theta + \mu_x\mu_y\cos^2\theta - \mu_x\mu_y\sin^2\theta + \sin\theta\cos\theta\,{\mu_y}^2$$
$$= \frac{1}{2}({\mu_y}^2 - {\mu_x}^2)\sin 2\theta + \mu_x\mu_y\cos 2\theta$$

$$\|\boldsymbol{x}'\|^2 - n{\mu_{x'}}^2 = (\|\boldsymbol{x}\|^2 - n{\mu_x}^2)\cos^2\theta + (\boldsymbol{x}^T\boldsymbol{y} - n\mu_x\mu_y)\sin 2\theta + (\|\boldsymbol{y}\|^2 - n{\mu_y}^2)\sin^2\theta$$
$$= nVar[\boldsymbol{x}]\cos^2\theta + nCOV[\boldsymbol{x}, \boldsymbol{y}]\sin 2\theta + nVar[\boldsymbol{y}]\sin^2\theta$$

$$\boldsymbol{x'}^T\boldsymbol{y'} - n\mu_{x'}\mu_{y'} = \frac{1}{2}\{(\|\boldsymbol{y}\|^2 - \|\boldsymbol{x}\|^2) - n(\mu_y{}^2 - \mu_x{}^2)\}\sin 2\theta + (\boldsymbol{x}^T\boldsymbol{y} - n\mu_x\mu_y)\cos 2\theta$$
$$= \frac{n}{2}(Var[\boldsymbol{y}] - Var[\boldsymbol{x}])\sin 2\theta + nCOV[\boldsymbol{x},\boldsymbol{y}]\cos 2\theta$$

Thus, we obtain new regression coefficients, a' and b' as

$$a' = \frac{\boldsymbol{x'}^T\boldsymbol{y'} - n\mu_{x'}\mu_{y'}}{\|\boldsymbol{x'}\|^2 - n\mu_{x'}{}^2} = \frac{\frac{1}{2}(Var[\boldsymbol{y}] - Var[\boldsymbol{x}])\sin 2\theta + COV[\boldsymbol{x},\boldsymbol{y}]\cos 2\theta}{Var[\boldsymbol{x}]\cos^2\theta + COV[\boldsymbol{x},\boldsymbol{y}]\sin 2\theta + Var[\boldsymbol{y}]\sin^2\theta} \quad (A5)$$

$$b' = \mu_{y'} - a'\mu_{x'} \quad (A6)$$

When $\theta = 0$, $a' = a$ and $b' = b$ hold.

APPENDIX 3: Questionnaire sheet

AN UNDERUTILIZATION OF ENGINEERING PROJECT MANAGERS IN THE CONSTRUCTION INDUSTRY:

A CASE STUDY OF NIGERIA

EBUKA VALENTINE IROHA

RESEARCH QUESTIONNAIRE

Overview of the Research Study

This survey is based on a PhD research study. The summary aim of this research is to conduct an institutional analysis to identify the causes of project manager underutilization and underperformance in the Nigerian Construction Industry, examining how these factors lead to low commitment, poor contributions, and subsequent project delays and cost overruns, while proposing potential solutions.

Questionnaire Survey Instructions

- There are no rights or wrongs answers to the questions in this survey. Select the most appropriate answer for each question based on your view/experience.
- There may be questions that appear irrelevant or impertinent. However, it is necessary in this study that all questions are answered, as the questionnaire is designed to achieve particular research objectives and it is hoped not to offend respondents in anyway. If there is a question(s) that you are unwilling or unable to answer, you may leave it unanswered and continue to the remainder of the questionnaire.
- Remember that BOTH YOUR IDENTITIY and that of your company you work for WILL REMAIN STRICTLY CONFIDENTIAL.

Kochi University of Technology, Japan

1. WHAT IS YOUR GENDER?

Male Female

2. WHICH OF THESE BEST DESCRIBES YOUR POSITION IN YOUR ORGANIZATION

   a. Executive/Director/Project Sponsor
   b. Project Manager
   c. Safety Manager
   d. Resource Manager
   e. Project Engineer
   f. Others (Please Indicate Position) .....

3. HOW LONG HAVE YOU BEEN WORKING IN A PROJECT MANAGEMENT PROFESSION IN NIGERIA?

   a. Less than 1 year

   b. 1 to 5 years

   c. 6 to 10 years

   d. 11 to 15 years

   e. 16 to 20 years

   f. More than 20 years

4. WHAT TYPE OF ORGANIZATION ARE YOU WORKING FOR/WITH?

   a. Government sector

   b. Private Consulting company

   c. Private Contractor company

   d. Others (Please specify) .....

5. HOW LONG HAVE YOU BEEN WORKING IN YOUR CURRENT ORGANIZATION?

   a. Less than 1 year

   b. 1 to 5 years

   c. 6 to 10 years

   d. 11 to 15 years

   e. 16 to 20 years

   f. More than 20 years

6. The purpose of this question is to explore the level of project management practices in your construction organization.
Scale: 1(Not practice), 2 (Low practice), 3 (Medium practice), 4 (High practice), 5 (Very high practice).
Please choose the appropriate answer by ticking under your chosen level based on your

view and experience of project management practices in your current organization.

6A. PRE-PROJECT STAGE

1. Define project goal (Prepare project millstone, Gantt chat) and sketch plan to detailed design

1 2 3 4 5

Not practice Very high practice

2. Create WBS, Stakeholders identification, Risk analysis, document scopes, specify standard and establish a budget baseline

1 2 3 4 5

Not practice Very high practice

3. Prepare and use of timescale, cost analysis and identification of resources needed (Terms of reference TOR) and Negotiate contracts with external vendors

1 2 3 4 5

Not practice Very high practice

4. Create communication structure; identify project team and feasibility study on project objectives.

1 2 3 4 5

Not practice Very high practice

5. Work with the Architects and Engineers to obtain the specifications of the project

1 2 3 4 5

Not practice Very high practice

6. Obtain necessary regulations and permits and meeting with clients, consultants and top management

1 2 3 4 5

Not practice Very high practice

7. Involve in Regular project planning progress assessment meeting, Allocation of job responsibilities to the workforce

1 2 3 4 5

Not practice Very high practice

8. Preparation of health and safety management strategy, Involve in hiring of external labor

1 2 3 4 5

Not practice Very high practice

9. Involve in purchasing and supervision of equipment, materials and suppliers selections

1 2 3 4 5

Not practice Very high practice

10. Liaison with community host to have a successful project

1 2 3 4 5

Not practice Very high practice

11. Implementation of Monitory Control measures of Operational activities.

1 2 3 4 5

Not practice Very high practice

6B. EXECUTION PROJECT STAGE

1. Monitoring project processes and progression

1 2 3 4 5

Not practice Very high practice

2. Evaluate resources utilization per millstone on the planned estimate and prepare variance analysis

1 2 3 4 5

Not practice Very high practice

3. Tracking the effects, cost and confirmation to client specification and standard

1 2 3 4 5

Not practice Very high practice

4. Contractor Project evaluation report

1 2 3 4 5

Not practice Very high practice

5. Confirming safety and hazard prevention on the site

1 2 3 4 5

Not practice Very high practice

6. Freedom to make decisions when necessary and Involvement in Prevention of any obstacle/hurdle

1 2 3 4 5

Not practice Very high practice

7. Prepare internal and external reports pertaining to the project status

1 2 3 4 5

Not practice Very high practice

8. Prepare daily progress report on the project

1 2 3 4 5

Not practice Very high practice

9. Attending meetings with the top management and client to give details of the project progress

1 2 3 4 5

Not practice Very high practice

10. Encouraging other workers

1	2	3	4	5
Not practice				Very high practice

6C POST-PROJECT STAGE

1. Involvement on check-list project assessment

1	2	3	4	5
Not practice				Very high practice

2. Completing project documents and review project deliverables

1	2	3	4	5
Not practice				Very high practice

3. Preparation and getting project result approved and Conduct post-implementation audit

1	2	3	4	5
Not practice				Very high practice

4. Involve in completing final project report and hand over to client

1	2	3	4	5
Not practice				Very high practice

5. Develop lesson-learnt manual for personal or organizational improvement based on the nature of the project

1	2	3	4	5
Not practice				Very high practice

7. The purpose of this question is to ascertain the level of importance/effectiveness of project management practices in your construction organization.

Scale: 1(Not important/effective), 2 (Low important/effective), 3 (Medium important/effective), 4 (High important/effective), 5 (Very high important/effective)

please choose the appropriate answer by ticking on the your chosen level of based on your view and experience in project management practices in your current organization

7A. PRE-PROJECT STAGE

1. Define project goal (Prepare project millstone, Gantt chat) and sketch plan to detailed design

1	2	3	4	5
Not important/effective				Very important/effective

2. Create WBS, Stakeholders identification, Risk analysis, document scopes, specify standard and establish a budget baseline

1 2 3 4 5

Not important/effective Very high important/effective

3. Prepare and use of timescale, cost analysis and identification of resources needed (Terms of reference TOR) and Negotiate contracts with external vendors

1 2 3 4 5

Not important/effective Very high important/effective

4. Create communication structure; identify project team and feasibility study on project objectives.

1 2 3 4 5

Not important/effective Very high important/effective

5. work with the Architects and Engineers to obtain the specifications of the project

1 2 3 4 5

Not important/effective Very high important/effective

6. Obtain necessary regulations and permits and meeting with clients, consultants and top management

1 2 3 4 5

Not important/effective Very high important/effective

7. Involve in Regular project planning progress assessment meeting, Allocation of job responsibilities to the workforce

1 2 3 4 5

Not important/effective Very high important/effective

8. Preparation of health and safety management strategy, Involve in hiring of external labor

1 2 3 4 5

Not important/effective Very high important/effective

9. Involve in purchasing and supervision of equipment, materials and suppliers selections

1 2 3 4 5

Not important/effective Very high important/effective

10. Liaison with community host to have a successful project

1 2 3 4 5

Not important/effective Very high important/effective

11. Implementation of Monitory Control measures of Operational activities.

1 2 3 4 5

Not important/effective Very high important/effective

7B. EXECUTION PROJECT STAGE

1. Monitoring project processes and progression

1 2 3 4 5

Not important/effective Very high important/effective

2. Evaluate resources utilization per millstone on the planned estimate and prepare variance analysis

1 2 3 4 5

Not important/effective Very high important/effective

3. Tracking the effects, cost and confirmation to client specification and standard

1 2 3 4 5

Not important/effective Very high important/effective

4. Contractor Project evaluation report

1 2 3 4 5

Not important/effective Very high important/effective

5. Confirming safety and hazard prevention on the site

1 2 3 4 5

Not important/effective Very high important/effective

6. Freedom to make decisions when necessary and Involvement in Prevention of any obstacle/hurdle

1 2 3 4 5

Not important/effective Very high important/effective

7. Prepare internal and external reports pertaining to the project status

1 2 3 4 5

Not important/effective Very high important/effective

8. Prepare daily progress report on the project

1 2 3 4 5

Not important/effective Very high important/effective

9. Attending meetings with the top management and client to give details of the project progress

1 2 3 4 5

Not important/effective Very high important/effective

10. Encouraging other workers

1 2 3 4 5

Not important/effective Very high important/effective

7C. POST-PROJECT STAGE

1. Involvement on check-list project assessment

1 2 3 4 5

Not important/effective Very high important/effective

2. Completing project documents and review project deliverables

1 2 3 4 5

Not important/effective Very high important/effective

3. Preparation and getting project result approved and Conduct post-implementation audit

1 2 3 4 5

Not important/effective Very high important/effective

4. Involve in completing final project report and hand over to client

1 2 3 4 5

Not important/effective Very high important/effective

5. Develop lesson-learnt manual for personal or organizational improvement based on the nature of the project

1 2 3 4 5

Not important/effective Very high important/effective

THE LEVEL OF INVOLVEMENT OF PROJECT MANAGERS IN PROJECT MANAGEMENT PRACTICES THE ORGANIZATION.

8. The purpose of this question is to investigate the level of involvement of project managers in project management practices in the organization.

Scale: 1(No Involvement), 2 (Low Involvement), 3 (Medium Involvement) 4 (High Involvement), 5 (Very high Involvement)

8A. PRE-PROJECT STAGE

1. Define project goal (Prepare project millstone, Gantt chat) and sketch plan to detailed design

1 2 3 4 5

No involvement Very high involvement

2. Create WBS, Stakeholders identification, Risk analysis, document scopes, specify standard and establish a budget baseline

1 2 3 4 5

No involvement Very high involvement

3. Prepare and use of timescale, cost analysis and identification of resources needed (Terms of reference TOR) and Negotiate contracts with external vendors

1 2 3 4 5

No involvement Very high involvement

4. Create communication structure; identify project team and feasibility study on

project objectives.

1 2 3 4 5

No involvement Very high involvement

5. Work with the Architects and Engineers to obtain the specifications of the project

1 2 3 4 5

No involvement Very high involvement

6. Obtain necessary regulations and permits and meeting with clients, consultants and top management

1 2 3 4 5

No involvement Very high involvement

7. Involve in Regular project planning progress assessment meeting, Allocation of job responsibilities to the workforce

1 2 3 4 5

No involvement Very high involvement

8. Preparation of health and safety management strategy, Involve in hiring of external labor

1 2 3 4 5

No involvement Very high involvement

9. Involve in purchasing and supervision of equipment, materials and suppliers selections

1 2 3 4 5

No involvement Very high involvement

10. Liaison with community host to have a successful project

1 2 3 4 5

No involvement Very high involvement

11. Implementation of Monitory Control measures of Operational activities.

1 2 3 4 5

No involvement Very high involvement

8B. EXECUTION PROJECT STAGE

1. Monitoring project processes and progression

1 2 3 4 5

No involvement Very high involvement

2. Evaluate resources utilization per millstone on the planned estimate and prepare variance analysis

1 2 3 4 5

No involvement Very high involvement

3. Tracking the effects, cost and confirmation to client specification and standard

1 2 3 4 5

No involvement Very high involvement

4. Contractor Project evaluation report

1 2 3 4 5

No involvement Very high involvement

5. Confirming safety and hazard prevention on the site

1 2 3 4 5

No involvement Very high involvement

6. Freedom to make decisions when necessary and Involvement in Prevention of any obstacle/hurdle

1 2 3 4 5

No involvement Very high involvement

7. Prepare internal and external reports pertaining to the project status

1 2 3 4 5

No involvement Very high involvement

8. Prepare daily progress report on the project

1 2 3 4 5

No involvement Very high involvement

9. Attending meetings with the top management and client to give details of the project progress

1 2 3 4 5

No involvement Very high involvement

10. Encouraging other workers

1 2 3 4 5

No involvement Very high involvement

8C. POST-PROJECT STAGE

1. Involvement on checklist project assessment

1 2 3 4 5

No involvement Very high involvement

2. Completing project documents and review project deliverables

1 2 3 4 5

No involvement very high involvement

3. Preparation and getting project result approved and Conduct post-implementation audit

1 2 3 4 5

No involvement Very high involvement

4. Involve in completing final project report and hand over to client

1 2 3 4 5

No involvement Very high involvement

5. Develop lesson-learnt manual for personal or organizational improvement based on the nature of the project

1 2 3 4 5

No involvement Very high involvement

10 The purpose of this question is to investigate the level of project management tasks assign to project managers by organizations in your construction organizations.
Scale: 1 (Not assign), 2 (Low assign), 3 (Medium assign) 4 (High assign), 5 (Very high assign)

10A. PRE-PROJECT STAGE

1. Define project goal (Prepare project millstone, Gantt chat) and sketch plan to detailed design

1 2 3 4 5

Not assign Very high assign

2. Create WBS, Stakeholders identification, Risk analysis, document scopes, specify standard and establish a budget baseline

1 2 3 4 5

Not assign Very high assign

3. Prepare and use of timescale, cost analysis and identification of resources needed (Terms of reference TOR) and Negotiate contracts with external vendors

1 2 3 4 5

Not assign Very high assign

4. Create communication structure; identify project team and feasibility study on project objectives.

1 2 3 4 5

Not assign Very high assign

5. work with the Architects and Engineers to obtain the specifications of the project

1 2 3 4 5

Not assign Very high assign

6. Obtain necessary regulations and permits and meeting with clients, consultants and top management

1 2 3 4 5

Not assign Very high assign

7. Involve in Regular project planning progress assessment meeting, Allocation of job

responsibilities to the workforce

1 2 3 4 5

Not assign Very high assign

8. Preparation of health and safety management strategy, Involve in hiring of external labor

1 2 3 4 5

Not assign Very high assign

9. Involve in purchasing and supervision of equipment, materials and suppliers selections

1 2 3 4 5

Not assign Very high assign

10. Liaison with community host to have a successful project

1 2 3 4 5

Not assign Very high assign

11. Implementation of Monitory Control measures of Operational activities.

1 2 3 4 5

Not assign Very high assign

10B. EXECUTION PROJECT STAGE

1. Monitoring project processes and progression

1 2 3 4 5

Not assign Very high assign

2. Evaluate resources utilization per millstone on the planned estimate and prepare variance analysis

1 2 3 4 5

Not assign Very high assign

3. Tracking the effects, cost and confirmation to client specification and standard

1 2 3 4 5

Not assign Very high assign

4. Contractor Project evaluation report

1 2 3 4 5

Not assign Very high assign

5. Confirming safety and hazard prevention on the site

1 2 3 4 5

Not assign Very high assign

6. Freedom to make decisions when necessary and Involvement in Prevention of any obstacle/hurdle

1 2 3 4 5
Not assign Very high assign

7. Prepare internal and external reports pertaining to the project status
1 2 3 4 5
Not assign Very high assign

8. Prepare daily progress report on the project
1 2 3 4 5
Not assign Very high assign

9. Attending meetings with the top management and client to give details of the project progress
1 2 3 4 5
Not assign Very high assign

10. Encouraging other workers
1 2 3 4 5
Not assign Very high assign

10C. POST-PROJECT STAGE

1. Involvement on checklist project assessment
1 2 3 4 5
Not assign Very high assign

2. Completing project documents and review project deliverables
1 2 3 4 5
Not assign Very high assign

3. Preparation and getting project result approved and Conduct post-implementation audit
1 2 3 4 5
Not assign Very high assign

4. Involve in completing final project report and hand over to client
1 2 3 4 5
Not assign Very high assign

5. Develop lesson-learnt manual for personal or organizational improvement based on the nature of the project
1 2 3 4 5
Not assign Very high assign

MOTIVATIONAL SUPPORT FOR PROJECT MANAGERS
12. The purpose of this section is to explore the level of motivational support provide to project managers by the employer organizations in your construction organizations.

Scale: 1 (not Practice), 2 (low Practice), 3 (medium Practice) 4 (high Practice) 5 (very high Practice)
Please choose the appropriate answer by ticking on each question based on your view and experience on the motivational support provide to project managers in your current organization

PROJECT MANAGERS MOTIVATION FACTORS

1. Obtain career development

1	2	3	4	5
Not practice				Very high practice

2. Obtain job promotion

1	2	3	4	5
No practice				Very high practice

3. Appropriate Job description

1	2	3	4	5
No practice				Very high practice

4. Appreciate challenges in doing task

1	2	3	4	5
No practice				Very high practice

5. Sudden changes in projects by the client

1	2	3	4	5
No practice				Very high practice

6. Delay in responding to requests for information and project materials

1	2	3	4	5
No practice				Very high practice

7. Achieve job training

1	2	3	4	5
No practice				Very high practice

8. Good teamwork

1	2	3	4	5
No practice				Very high practice

9. Obtain Non-financial incentives

1	2	3	4	5
No practice				Very high practice

10. Have good relations with colleagues and supervisor

1	2	3	4	5
No practice				Very high practice

11. Sufficient communication with supervisor and top management

1	2	3	4	5
No practice				Very high practice

12. Obtain financial incentive or other annual bonuses

1	2	3	4	5
No practice				Very high practice

13. Receive fair salary paid on time

1	2	3	4	5
No practice				Very high practice

14. Offering non-interest loan

1	2	3	4	5
No practice				Very high practice

15. Good working condition

1	2	3	4	5
No practice				Very high practice

16. Job security

1	2	3	4	5
No practice				Very high practice

17. Company keep to their promises

1	2	3	4	5
No practice				Very high practice

18. Have a fair time to do task

1	2	3	4	5
No practice				Very high practice

19. Receive family and friends support

1	2	3	4	5
No practice				Very high practice

20. Involvement in decision-making

1	2	3	4	5
No practice				Very high practice

21. Freedom to take decision at work

1	2	3	4	5
No practice				Very high practice

22. Good and polite feedback on a job

1	2	3	4	5
No practice				Very high practice

23. Job appreciation

1	2	3	4	5
No practice				Very high practice

24. Receive compliment from superiors

1	2	3	4	5
No practice				Very high practice

25. Have good working environment and working materials

1	2	3	4	5
No practice				Very high practice

26. Medical insurance and Pension scheme

1	2	3	4	5
No practice				Very high practice

LIST OF PUBLICATIONS

Iroha, E. V., Watanabe, T., & Satoshi, T. (2024). Flawed Institutional Structures: Project Managers Underutilized in Nigeria's Construction Industry. *Buildings,* 14(3), 807. (Q2, Impact Factor = 3.2). https://doi.org/10.3390/buildings14030807

Iroha, E. V., Watanabe, T., & Tsuchiya, S. (2024). Valuation of Project Managers to Enhance Project Performance in Nigeria's Construction Industry. *Buildings*, 14(9), 2668. (Q2, Impact Factor = 3.2). https://doi.org/10.3390/buildings14092668

International conference attended

International Conference on Civil and Environmental Engineering. Moscow, Russia. August 29 – 30th 2024. (Awarded Best Presentation of the conference).